IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF ALASKA

JOHNNIE CRISCO and THE ESTATE OF ANNA CRISCO by HER PERSONAL REPRESENTATIVE, ROBIN BOOKER,

Plaintiffs,

vs.

UNITED STATES OF AMERICA,

Defendant.

Case No. 3:03-cv-0011-HRH

TRANSCRIPT OF EXCERPT OF PROCEEDINGS

HELD BEFORE THE HONORABLE H. RUSSEL HOLLAND

Monday, September 17, 2007

Testimony of Dr. Hall and Dr. Bhagia

Pages 1 - 189, inclusive

Anchorage, Alaska

A-P-P-E-A-R-A-N-C-E-S

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I-N-D-E-X

ANCHORAGE, ALASKA; MONDAY, SEPTEMBER 17, 2007

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(Counter 09:06:37)

MR. KAPOLCHOK: Your Honor, we'd call as our first witness Dr. Robert Hall.

THE CLERK: Dr. Hall, please stand up before me so I can swear you in.

Please raise your right hand.

(Witness sworn.)

THE CLERK: Thank you. Please have a seat in the witness box.

Please speak into the microphone at all times.

Please state your full name, spelling your last name, and a current address.

THE WITNESS: My name is Robert J. Hall. Was that spell the last name? I'm sorry.

THE CLERK: Yes, sir.

THE WITNESS: H-A-L-L. My address, home address is 9875 Middle Rock Road, Anchorage, Alaska, 99507.

THE CLERK: Thank you.

MR. KAPOLCHOK: Thank you, Your Honor.

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DIRECT EXAMINATION

BY MR. KAPOLCHOK:

Q. Good morning, Dr. Hall.

A. Good morning.

Q. As you can see, this is -- this courtroom is kind of oriented for you to speak to the jury; but in this case, as the judge said, he is the finder of fact. I'm on your left; he's on your right. I'll leave it to you to -- if you need to explain something, to turn to him or -- I know it's cumbersome, but it certainly should work out all right.

To begin by introducing you, Dr. Hall, what is your profession?

A. An orthopedic surgeon.

Q. And tell us about your practice. And let's start with your association with the group you work with, what's their name?

A. Our group is named is Orthopedic Physicians of Anchorage. I joined them in 2000.

Q. In 2000? And how many orthopedic surgeons are in that group, sir?

A. Currently we have seven.

Q. Could you name them?

A. Ed Voke, James Eule, Eugene Chang.

William Mills, Chris Manion, Mark Kornmesser.

Q. Okay. Is Dr. Voke still practicing?

A. Part time.

Q. Within that group, Doctor -- well, let me back up.

Physically, where do you all practice?

A. Our office is at 3801 Lake Otis.

Q. Is that that recent new structure that's been constructed on --

A. Yes.

Q. Within that practice, Doctor, do you as a group tend to specialize or focus on certain areas of orthopedics?

A. We do.

Q. And what is yours?

A. My focus is in joint replacement.

Q. Are you board certified, Doctor?

A. Yes.

Q. And when did you become board certified as an orthopedic surgeon?

A. Board certified in 1997. I just completed my re-certification this year for an additional ten years.

Q. And how long have you been licensed to practice medicine in Alaska?

A. Since 1995.
Q. And, Doctor, are you a member of any associations, such as the American Medical Association?
A. American Academy of Orthopedic Surgeons, Anchorage Orthopedic Society, and Alaska State Medical Association.
Q. How long have you been in private practice?
A. Since January of 2000.
Q. And prior to that, prior to being in private practice, tell us what clinical experience you have.
A. My first position was a staff orthopedic surgeon at Alaska Native Medical Center from, I think it was, June of '95 until December of '99.
Q. Roughly five years with ANMC?
A. Correct.
Q. Did that work with ANMC provide a lot of surgical opportunities?
A. Yes.
Q. Was that five years of broad orthopedic practice?
A. Yeah, very broad.
Q. Could you tell the judge what your

education was leading to becoming an orthopedic surgeon. Just outline it for us, if you could, please.

A. I did undergraduate work at Iowa State University, had a BA in chemistry. Then I went to the University of Iowa medical school. I did a rotating internship at Sacrad Heart Medical Center in Spokane, Washington. And I did four years of orthopedic residency at the San Francisco orthopedic residency training program in San Francisco.

Q. And then to Alaska?

A. Correct.

Q. Okay. Dr. Hall, this case involves a total knee replacement, correct?

A. Correct.

Q. When did you first get exposed or when were you first trained to do that orthopedic procedure? When and where, is what I'm getting at.

A. During residency. Actually, my first year of residency I had done total knee replacements under supervision.

Q. Under supervision?

A. Yeah.

Q. And how is a physician, an orthopedic physician, instructed or instructed and taught to be

able to do that procedure on his own?

A. Well, you're expected to read -- as a resident, you're expected to read the manuals and all that. And then they're done -- they're done under direct supervision of a supervising physician when you're performing them as a resident.

Q. Is there a period where you observe them being done?

A. Yes.

Q. Is there a period where you assist them being done?

A. Yes.

Q. And then eventually you're allowed to do them under the supervision?

A. Correct.

Q. How many procedures were you either observing, allowed to assist, or eventually allowed to perform on your own under direct supervision before you could go ahead and just Dr. Hall and his assistant walk in and do the procedure? Can you estimate the number?

A. During training, you mean, how many?

Q. Yes.

A. I was probably involved in a hundred of them, knee replacements, I would imagine.

Q. The -- let me ask you to do this. Before jumping into your treatment of Mr. Crisco, I'm wondering if you could give us a real basic primer on the anatomy and physiology --

THE CLERK: Mr. Kapolchok, can I ask you to please wear either the lapel mike or get closer to a microphone.

MR. KAPOLCHOK: Okay. Thank you.

BY MR. KAPOLCHOK:

Q. Dr. Hall, I'm going to hand you a model of the knee. And you brought the model of the knee with you?

A. It's a model of a knee with a knee replacement on it.

MR. KAPOLCHOK: I don't need to wear this if I stand over here; is that all right?

THE CLERK: That's fine.

MR. KAPOLCHOK: Okay. Thanks.

BY MR. KAPOLCHOK:

Q. Doctor, could you identify for the court the major components of the knee joint in bones.

A. It's a pretty large topic. You know, this is the thighbone or femur bone, and the tibia or shinbone, and the fibula, which is the bone on the side.

And then as far as arthritis is concerned, one of the main things that -- concerned about is the cartilage that covers the entire end of the bone, which is called articular cartilage. And that covers the entire end of the femur bone and entire top of the tibia bone, and then the back side of the patella or kneecap. And the wear of that is what arthritis is, and that's what generally leads to knee replacement.

And then other structures that are important during the knee replacement are the ligaments of the knee. There are two on the sides of the knee called collateral ligaments. There is one on this side called the lateral collateral. One on this side called the medial collateral.

And there is two in the middle underneath the kneecap. One called the ACL, or anterior cruciate ligament. Another one on the back called the PCL, or posterior cruciate ligament.

And then I guess one other thing germane to this case is the top of the tibia is not perpendicular to the long axis of the shaft of the tibia bone. It's actually tipped back a little bit. The terminology used for that is slope. If you take this long axis and make a perpendicular to that, if

it's tipped back that's the term posterior slope. If it's tipped higher than the perpendicular, that's considered anterior slope.

Q. Are most of us built then with a normal or natural posterior slope?

A. Yes.

Q. And how does that mechanically or in terms of biomechanics --

A. Well, the --

Q. -- interacting with -- you know, I'll get it out eventually, Doctor. I know we talked about this.

In interacting with the femoral component, why is that so?

A. Well, the end of the femur bone is not a half circle. It has this oblong shape which allows more motion of the knee. If it was perfectly round, then you would only have 90 degrees of motion before this came around and hit the back of the knee. So it allowed the motion it does have, it's got this oblong contour.

And if it's not tipped this way, it has trouble coming around -- the tibia bone can't come around the corner of the femur, at least it has more difficulty doing so.

THE COURT: If it's not tipped back?
THE WITNESS: If it's not tipping back. If it's tipped this way, you can kind of get the idea as it comes around it would be -- it would be very tight here in the back as it came around this way.
BY MR. KAPOLCHOK:
Q. Now, in doing a knee replacement, components are provided in sort of a kit or a package?
A. Well, there are various sizes available and you make measurements and then you select from the inventory that you have of sizes.
Q. Now, you prefer a particular manufacturer knee replacement?
A. I do.
Q. And what is that, Doctor?
A. The brand is called Zimmer, or the manufacturer is Zimmer.
Q. That's Z-I-M-M-E-R?
A. Yes.
Q. All right. And are the components designed in the Zimmer were a particular slope?
A. Yes, they are.
Q. And do you know what that slope is?

A. 7 degrees posterior slope.
Q. Posterior?
A. Uh-huh.
Q. Now, the knee that Mr. Crisco had, and I will get in and walk you through the records and your treatment of Mr. Chris, was a Profix knee?
A. Yes.
Q. All right. And have you had any experience in installing Profix knees?
A. No, I have not.
Q. Other than you revised Mr. Crisco's knee, other than his knee, have you revised any other Profix knees that you can recall?
A. Not that I can recall.
Q. I'd like to go through your treatment of Mr. Crisco, Doctor, and I'll hand you...
I'm looking for our original exhibits; here they are.
Dr. Hall -- I'll not talk when I'm away from this mike here, or try not to.
I handed you a notebook marked as plaintiff's exhibits. And if you'll notice, they are divided into numerical bundles. I'd like to focus mainly on Exhibit 2, which are your Orthopedic Physicians of Anchorage notes, and Exhibit 7, which

are Providence Hospital selected records, primarily your records created at the hospital.

Have you had a chance to review those prior to this morning?

A. Yes, I have.

Q. Okay. Before I go through them, could you give us kind of an overview or a summary, just hitting the high points, a summary of your meeting with Mr. Crisco, what you did, and the various procedures that followed meeting Mr. Crisco. Just kind of an overview so we can then fit in the details.

A. I first saw Mr. Crisco in October 2001 that complained of, you know, the painful knee arthroplasty. And evaluated him with x-rays and a bone scan. He had had some previous workup done at the VA, which he also had records of.

And as a result of that, felt that he had a mechanical malalignment of his knee. And offered him a revision of that knee, which he elected to do and subsequently did do. And then that unfortunately became infected.

And then we attempted to salvage that knee. And actually -- well, there's quite a few surgeries. But we first attempted to salvage and

retain his knee and that failed. Then we had to take everything out, all the metal components. And he ended up doing long-term IV antibiotics for a period.

And then at that point it appeared the infection was -- had been treated by lab work and cultures, and we went back in and put in another knee. And unfortunately, that one became infected as well. And then tried to salvage that knee with another surgery, and unfortunately that didn't work either.

And then he had a chronic infected knee that was treated for quite a while with suppressive antibiotics. And then he continued to have significant pain, and so we offered him several options, as far as surgery.

And he elected to have the amputation surgery performed, which was then done. And then there was an additional surgery after the amputation surgery to revise that again.

Q. Okay. Great. Thank you very much.

Doctor, let's begin at the beginning with Exhibit 2. And the first page of Exhibit 2, if you'll look in the bottom right-hand corner, lawyers call these Bates numbers. It would be CRI 5002.

Okay. Do you have that in front of you?
A. Yes, I do.
Q. All right. Doctor, is that your first -- or your intake chart note, first contact with Mr. Crisco?
A. Yes, it is.
Q. All right.
THE COURT: Mr. Kapolchok, in connection with smoothing this over, let's find out if we can just admit Exhibit 2 as a binder of documents.
MR. POMEROY: No objection, Your Honor.
THE COURT: Exhibit 2 is admitted.
(Exhibit 2 admitted into evidence.)
MR. KAPOLCHOK: Thank you, Your Honor, very much.
May I also offer the excerpts that are bundled as Exhibit 7?
THE COURT: Any objection to 7?
MR. POMEROY: No, Your Honor.
THE COURT: Exhibit 7 is also admitted.
MR. KAPOLCHOK: Great. Thanks.
(Exhibit 7 admitted into evidence.)
BY MR. KAPOLCHOK:
Q. All right. Dr. Hall, tell us again why Johnnie came to see you.

A. Because of persistent knee pain after his knee arthroplasty.

Q. Were you provided, in addition to having Mr. Crisco there, information from his prior treatment from the VA?

A. Yes. Apparently I did have reports from the VA.

Q. Your note here says that you had x-rays and laboratory studies provided to you?

A. Correct.

Q. And it states here there was no evidence of loosening or infection.

Was that based on a review of the VA materials?

A. Yes.

Q. Your report also mentions the possibility of RSD; is that correct?

A. That's correct.

Q. What is RSD?

A. It's a condition called reflex sympathetic dystrophy, also known as complex regional pain syndrome these days. It's a problem with the nervous system where there's a cross-connection between the sympathetic nervous system and pain system that gets in a feedback loop that doesn't

shut down.

THE COURT: Doctor, that was a little fast for me. What does RSD stand for?

THE WITNESS: Reflex sympathetic dystrophy.

THE COURT: Thank you. Go ahead.

BY MR. KAPOLCHOK:

Q. And you mentioned, Doctor, that reflex sympathetic dystrophy has also been reclassified now and has a new moniker; what is that new name?

A. Complex regional pain syndrome.

Q. Same thing?

A. Same thing.

Q. Doctor, you really talk fast. And I don't mean to offend you, but I'll probably interrupt you to slow you down. I take it you've always done that.

A. Well, this is a little talk that I've given many times, so I guess I give it too fast.

Q. Okay. Is reflex sympathetic dystrophy, that nerve disorder that you described, is that something that you encounter in your practice as an orthopedic surgeon?

A. Yes.

Q. Was that -- when Mr. Crisco presented

himself to you in his VA records, was that within the -- what I call the differential diagnosis that you were wrestling with at that time?

A. Yes.

Q. In fact, do you remember whether or not it had actually been mentioned by the -- well, one of the VA physicians? Can you tell from your chart note? I know this is a long time ago.

A. My note indicates, at least from the VA, that the possibility of RSD had been mentioned.

Q. All right. You apparently did a physical examination of Mr. Crisco on that first visit; is that right?

A. That's correct.

Q. And am I fair to conclude that your effort or your focus was to find out what was causing this painful knee?

A. Correct.

Q. Did you find any problems with stability?

A. No.

Q. How do you test for that?

A. Well, the patient basically is lying on their back and you hold onto their tibia or shin and move from side to side with their knee in flexion -- or full extension and various degrees of flexion to

see if it opens up or has laxity.

Q. It appears, Doctor, and correct me if I'm wrong, that under x-rays you reviewed x-rays from the VA.

A. Correct.

Q. Is that right?

A. Yes.

Q. And you state, right at the bottom of Exhibit 5002, some mild notching of the anterior cortex of the femur.

What is that?

A. Can I use this model?

Q. Certainly.

A. When you're making the cut on the femur bone, this cut is considered the anterior cut. If it's a little bit too deep, it will get into the cortex of the femur bone, which is what's called notching. But also one part of the femur, it will stick up farther than the other one, side of the other. So it's not always considered significant to have notching if it's pretty mild.

THE COURT: Is the notching a natural occurrence or something that's a function of prior procedures?

THE WITNESS: It's from the bone cut made

to implant the metal component.
BY MR. KAPOLCHOK:
Q. Doctor, while you have that -- I asked you to bring an example that you would use with a patient to demonstrate what a knee replacement is.
Would you point to and describe the femoral component, and then also the tibial component, while -- since you already used that.
A. Well, the femoral component is this cap that covers the entire end of the femur bone. And then on the tibial side there's a metal base plate. After that it's cut flush and that's placed on there. And then there is a plastic liner that snaps into that base plate. So when the motion occurs it's between the metal of the femur and the plastic of the tibial base plate.
THE COURT: Is this model the make of --
THE WITNESS: No.
THE COURT: -- prosthesis that Mr. Crisco had?
THE WITNESS: No. It's the not same manufacturer. It's a little different in the other regard in that it -- this particular model takes away both of those ligaments in the middle part of the knee, those cruciate ligaments that we talked

about earlier. The knee had --

THE COURT: Is this a model of the one that you placed in Mr. Crisco?

THE WITNESS: Not specifically. It's from the same manufacturer, but not...

BY MR. KAPOLCHOK:

Q. Is it a Zimmer?

A. Yes.

Q. Is that model a Zimmer?

A. Yes.

Q. And it's a little different than the one that you replaced?

A. Yes.

Q. In what way? Or, I should ask, is it significantly different?

A. The main difference has to do with this is a primary or first time around knee, and the revision knee has extra components for -- to engage more of the bone, basically what are called stems that go up into the femoral canal and down into the tibial canal, as well as a little bit different tibial liner.

THE COURT: Do all of them have that same kind of base plate on the tibia?

THE WITNESS: Yes.

BY MR. KAPOLCHOK:

Q. To return to your medical chart note of October 5th, 2001, Doctor. You state that there's no evidence of fracture, although alignment of the femoral component appears good.

So that was one of your findings from, again, the x-rays?

A. Yes.

Q. And you go on to state: On the lateral view there is the suggestion that the tibial plateau is placed with an anterior slope rather than a posterior slope.

Now, have you already explained to us why the posterior slope is used?

A. It would be the same reason in the prosthetic knee as it occurs naturally in nature in the human knee, because of the range of motion requirements.

Q. And by reviewing x-rays from the Veterans Administration, you were able to see that the slope was going in the other direction; is that fair?

A. Yes. There's that suggestion on that x-ray.

Q. Would it be helpful at this point, Doctor, to review an x-ray to show to us what you're talking

about?
A. Yes.
Q. Doctor, I'm going to hand you a light table and an x-ray. And, for the record, the x-rays have been catalogued and identified as Exhibit 6, page 2 of Exhibit 6.
And the one I'm putting before you is -- could you read the number on that one? Is it 3-A?
A. It says Exhibit 1.
Q. Well, that's from the deposition.
A. 3-A is correct.
Q. 3-A? Okay.
THE COURT: Is there an objection to Exhibit 6, part 3-A?
MR. POMEROY: I don't think so.
THE COURT: Come take a look.
MR. POMEROY: No, Your Honor.
THE COURT: 3-A of Exhibit 6 is admitted.
(Exhibit 3-A admitted into evidence.)
MR. KAPOLCHOK: Thank you.
BY MR. KAPOLCHOK:
Q. Would you demonstrate to the court --
MR. POMEROY: Excuse me for a minute. Is there a way that that could be tilted so it's -- we can see what Dr. Hall is demonstrating?

THE COURT: I'd rather if you came over here, so that that is where it is and I can see it head on.

You may get a better angle if you get over behind me here.

BY MR. KAPOLCHOK:

Q. Dr. Hall, I'm going to begin by kind of asking you a compound question, and then I'm going to move so you can talk. And I don't have to be shackled to this microphone.

The question is this. Please describe the type of view that this x-ray shows of Mr. Crisco's knee, and please explain to us how that film demonstrates the slope of the tibia tray.

A. Well, this is a lateral view of the knee. And the slope, as I mentioned earlier, is the reference is a -- you take the long axis of the tibia or the -- or use the anterior cortex, which is this front part of the tibia, and then draw perpendicular to that. And then that's your reference line.

And then you measure -- you're like doing this one, somebody is drawing the line here on the end, the top part of the tibia component, or you can use the very bottom of the base plate. And then the

angle between those two is the slope. And if this back part is higher than your reference line, then it's an anterior slope.

THE COURT: How do you decide where to put the reference line?

THE WITNESS: This is the -- the key line is the long axis of the tibia.

THE COURT: Is it 90 degrees to the long axis?

THE WITNESS: Correct.

THE COURT: The baseline is 90 degrees from the long axis?

THE WITNESS: Correct.

And then you measure the angle that the tibia base plate makes with that reference angle -- or excuse me, reference line.

And if this is higher than the reference -- if the back part is higher than the reference line, then it's an anterior slope. If the back part of the base plate is lower than the reference line, then it's a posterior slope, just by convention.

BY MR. KAPOLCHOK:

Q. Doctor, page 2 of your initial chart note, you discuss laboratory studies. And what did you

look at and what did you conclude from that --
A. Well, the two tests --
Q. What generally did you look at?
A. The two tests I looked at were the sedimentation rate and the white count, and those were normal.
Q. All right.
A. And those would tend to rule against infection as a cause.
Q. I take it that an infected knee could be a painful knee?
A. Yes. Right.
Q. And upon examination of Mister -- to go back a little bit -- examination of Mr. Crisco's knee, did it exhibit any indications of infection?
A. I didn't notice any significant swelling about the knee or warmth, which are common signs with infection.
Q. And you just told us the lab results were negative on infection?
A. Correct.
Q. Okay. And I don't know if I've asked you this, but -- and it's probably obvious, but an infected knee is a painful knee?
A. Yes.

Q. Okay. What was your conclusion and what course of action did you next take?

A. Well, at the end of the first visit I didn't have a specific diagnosis yet. I felt we needed further testing. And so we referred him for a test called a bone scan to help try to narrow down the possibilities.

Q. All right. And --

THE COURT: What are looking for in the bone scan?

THE WITNESS: One of the possibilities, or kind of the diagnostic possibilities were infection or this RSD or loosening. Say, with RSD, generally on a bone scan the entire knee will show activity, or what's commonly said is light up. If it's infection, it can be -- either the whole knee can light up or just parts of it. If it's loosening, oftentimes you'll see activity just around the metal parts.

BY MR. KAPOLCHOK:

Q. Let me -- what is a bone scan, Doctor? Tell us, how do they actually perform it?

A. Well, the patient has an injection or IV of a -- basically a radioactive tracer that attaches itself to white blood cells, which is what the body

uses to fight infection, also uses for inflammation.

So after the injection, you come back several hours later, and then they have a -- sort of a camera or device that can see the radiation from the tracer, and it can tell you where they're accumulating or where there's an uptake of the tracer.

Q. Is this type of bone scan also referred to as a, all capital letters, RNBI; is that the same type of bone scan, or if you --

A. I'm not familiar with that --

Q. You're not familiar?

A. -- acronym.

Okay. Is the bone scan a diagnostic tool frequently used to see if there is this RSD disease going on?

A. Yes.

Q. Is it in fact, Doctor, the best diagnostic tool to determine whether a person has RSD, to your knowledge?

A. Well, RSD is a difficult thing to diagnose. Short of imaging tests, a bone scan would be considered the best test to try to make that diagnosis.

Q. In addition to the bone scan, Doctor, did

you order any other diagnostic tests?

A. We probably did order another lateral view of the patient's knee as he was trying to extend the knee himself.

Q. Okay. So another x-ray?

A. Correct.

Q. Okay. All right, Doctor. Could you turn to your next visit with Mr. Crisco, and we'll speed this up a little and be able to move more efficiently. And that's document 5004.

Apparently Mr. Crisco was back on the 18th of October; is that right?

A. That's correct.

Q. But you did not have the films at that point; is that correct?

A. That's correct.

Q. All right. The next visit, Doctor, 5005.

That's October 23rd; is that right?

A. That's correct.

Q. All right. Do you review your own bone scans? I mean, bone scans you order?

A. Yes.

Q. All right. Did you in this case?

A. Yes.

Q. All right. You state, on the first page

of this chart note, you had reviewed it and there was increased uptake around the component in the tibia, as well as intense uptake within the patella.

Could you explain that to us in more layman like terms.

A. Okay. Well, the --

Q. Go ahead.

A. The bone scan had shown that there was accumulation of white blood cells essentially in those areas. That would be consistent with some form of inflammation.

Q. And what could cause that inflammation?

A. It could be from infection. It could be from loosening. It could be from overload or stress or -- on the components, or on the patella itself.

Q. So the possibilities are, where this inflammation that the bone scan shows, are loosening; is that one?

A. Correct.

Q. Infection is one?

A. Correct.

Q. Or stress caused by what?

A. If the components are malaligned it can put excess stress on different parts of the knee more than the underlying bone can withstand without

reacting.

Q. Okay. Thank you.

THE COURT: I take it the test tells you that something is going on but doesn't make it possible for you to differentiate between infection, stress, RSD?

THE WITNESS: Well, RSD you could rule out on the basis of the bone scan, because it was -- but the other three, as a stand-alone test, it could not do that.

BY MR. KAPOLCHOK:

Q. Now, a few minutes ago, Dr. Hall, you mentioned that you had another x-ray of the knee in full extension; is that correct? I'm looking at 5005 under x-ray.

A. Yes.

Q. Okay. And again, do you review your own films?

A. Yes.

Q. And what was your conclusion from that x-ray?

A. It showed that the plastic liner did not appear to be touching the femur, that the contact was in the posterior or back part of the plastic liner. And that the knee also is not -- was not

achieving full extension.

Q. You state, "It appears to be levering out." Could You explain that to us?

A. Well, as the knee comes around, normally the plastic part will conform to the femur part. But if it's levering it's coming around like this, where only part of it is touching.

THE COURT: Try that again.

THE WITNESS: Sorry.

THE COURT: I didn't really get the difference.

THE WITNESS: Normally you would see something like this, they would come around from flexion to extension, where there's contact between the plastic liner and the femur along the whole surface of the plastic.

THE COURT: Okay.

THE WITNESS: But with levering it will be just the back part as it comes around when you're doing that. And you'll have that gap.

THE COURT: You have this gap here.

THE WITNESS: And also there between the plastic and the --

THE COURT: Okay.

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BY MR. KAPOLCHOK:

Q. Could you summarize your conclusions for us, Doctor, after you reviewed the new x-ray and after you reviewed the bone scan that you would order?

And you're free to either summarize or read your conclusions, or whatever you'd like to do.

A. My conclusion was I felt his pain was coming from the position of his tibia base plate. That in combination with the fact that it was a posterior cruciate retaining knee, which meant that there is one other degree of restraint of the knee that sort of accentuated the problem.

THE COURT: I missed that one.

THE WITNESS: One of the ligaments in the middle part of the knee was one called the posterior cruciate ligament. With the type of knee that he had in place, that ligament was still there. And that tends to tether or make it tighter as it comes around.

BY MR. KAPOLCHOK:

Q. Now, if you've got the anterior slope as opposed to the posterior slope situation that you've discussed, and you have that posterior cruciate retaining ligament, does that make the mechanical

problem worse?
A. The presence of the posterior cruciate ligament?
Q. That's what I'm trying to ask.
A. Theoretically, yes.
Q. Okay.
THE COURT: Doctor, is the -- I think I got this in the right order. Is the anterior rather than the posterior tilt approximately the same, or appears to be approximately the same with your new x-rays compared to the original one you were looking at?
THE WITNESS: I didn't specify degrees, but just that it was anterior sloped in both x-rays, that I saw.
THE COURT: You didn't attempt to measure it the second time?
THE WITNESS: I don't see a notation of that.
BY MR. KAPOLCHOK:
Q. We'll get to some of your other records, Doctor, that you actually put that in.
What was the plan, Doctor, after the review of the bone scan and the new x-ray?
A. We discussed the possibility of revision

of the knee and he elected to do that. So we scheduled to have surgery.

THE COURT: Before we move on, let me make sure I understand one thing.

The bone scan suggested to you that there could be a probable infection even before the new revision was done?

THE WITNESS: In concert with the physical exam and the lab findings, I didn't think he had an infection.

THE COURT: All right. Thank you, sir.

BY MR. KAPOLCHOK:

Q. One follow-up on that, Doctor. You would not recommend a revision of the knee if you believed or hadn't ruled out an infected knee, would you?

A. Not a single stage revision, no.

Q. All right. Related to that concern of infection and prior to the surgery, did you refer Mr. Crisco to Dr. Makim for a preoperative work up?

A. Oh, Makin, yes.

Q. Oh, is it Makin?

A. Yes.

Q. Okay. What specialty is Dr. Makin in?

A. Internal medicine.

Q. Okay. And could you turn to Exhibit 7, which is the tab on the back, Doctor. And could you find Exhibit 12840.

A. I have that.

Q. All right. What is that medical chart, 12840?

A. It's a preoperative medical clearance for surgery by Dr. Makin.

Q. Okay. And what laboratory data did Doctor -- and correct me if I keep saying Makim. There is a Dr. Makim in town, isn't there?

A. Not that I'm aware of, but there probably is.

Q. Okay. It's Dr. Makin. All right. The internal medicine doctor, Dr. Makin, what laboratory data did he utilize to clear Mr. Crisco for surgery? And I'm looking at 12841.

A. He has the CBC, or complete blood count, essentially normal. Urinalysis, negative. Metabolic panel, some very mild elevation of one of the liver enzymes. And the sedimentation rate was normal.

Q. Okay. Now, the CBC is white blood cell?

A. It's included in there, yes.

Q. Lot more than that, just the white blood

cell count?
A. Yeah, there's quite a bit more than that, yeah.
Q. The sed rate, is that related to a lab test to determine whether there's infection?
A. It's one of them, yes.
Q. What about -- a urinalysis doesn't determine infection, does it?
A. Bladder infection, basically.
Q. Okay. And when Dr. Makin refers to a comprehensive metabolic panel, what does that involve?
A. It's like electrolytes and kidney function and liver function tests.
Q. Would that address the question of whether Mr. Crisco's knee was infected at all?
A. Not on a metabolic panel.
Q. Okay. On page 12842, Dr. Makin clears Mr. Crisco for surgery pending an electrocardiogram; is that right?
A. That's correct.
Q. Now, were you comfortable then that based on these lab tests that Mr. Crisco did not have an infection going into the surgery?
A. Correct.

Q. And to jump ahead, Doctor, and I'll go back to this. During the revision surgery, cult -- not cultures, but specimens were taken of Mr. Crisco's knee?

A. Yes, they were.

Q. And they were -- what do you do with those? Do you have them cultured for infection?

A. Yes. You take both swabs and tissue and send them to the lab, and then they send them to micro to try to grow bacteria out of them, basically, process them to. Culture them, I guess is the process.

Q. Right. Okay. So swabs meaning fluids --

A. Yes.

Q. -- that are in the knees?

A. Yes.

Q. Like blood and whatever else is in there?

A. Just the fluid that's inside the knee when you first open it up.

Q. Right. And then actual tissue samples?

A. Yes.

Q. And so those were taken from Mr. Crisco's knee when you went in to replace the components, right?

A. Correct.
Q. And what did they show?
A. There was no bacteria grow-outs and no evidence of infection.
Q. Okay. No bacteria or no evidence of infection; all right.
Is that done just as kind of a confirmatory task, or is there another reason to do that?
A. Well, confirmatory also has -- if you were to miss an infection like that, then it would -- you potentially could salvage it still at that stage, as opposed to letting it go for several weeks before it became diagnosed.
Q. So it would tip you off to take some sort of immediate prophylactic action?
A. Correct.
Q. Okay. Let's go to your operative note, Doctor. And maybe I can pick up the pace here a little bit. Exhibit 7, 12844 and 45.
Is that your operative note, Doctor?
A. Yes, it is.
Q. Okay. And when was the surgery, the revision surgery done? What date?
Does it look -- at the bottom there --

A. Oh.
Q. -- does it look like it was 11/7 of '01?
A. Yeah, it's cut off on this. But it says print 11/8.
Q. Okay.
A. Oh, dictated 11/7, so it would have been 11/7. Sorry.
Q. All right. In the middle of your note, Doctor, it refers to specimens. Is that what I just asked you about, the cultures taken for gram stains and aerobic and anaerobic cultures?
A. Correct.
Q. Is that your standard practice in doing knee surgery -- or knee replacement surgery, whether it's the first knee or replacing the knee?
A. Standard practice for revisions, not for primary.
Q. Okay. I skipped over it and I guess I shouldn't have.
Prior to the surgery, you had a meeting with Mr. Crisco and discussed the risks of the surgery; is that right?
A. That's correct.
Q. And was one of the risks infection?
A. Yes.

Q. What is the risk of infection based on evidence-based medicine and the studies that have been done of a primary knee replacement, in terms of percentages or however they express them?

A. It's usually, for primary knee replacements, depending upon other factors, somewhere between 1.5 to 2 percent, or maybe a little bit higher if they have other factors.

Q. All right. First time knee?

A. First time.

Q. Right. Now, for a revision, is the risk of infection greater?

A. Yes.

Q. Do we know, based on studies, how much greater?

A. The other study that I read is somewhere between 3 to 5 percent infection rate on revisions.

Q. So twice as much or maybe a little more than twice as much?

A. In that neighborhood, yeah.

Q. Right. Do they know why, or do you have an opinion as to why the infection rate is so much greater on a revision?

A. I think the presumed -- some of the

presumed factors are you're operating through tissue that's already been operated through once, so it doesn't have the same blood supply, same capability to heal and ward off infection. And the surgeries are generally longer. Infection rates are tied to length of surgery. More exposure is required, so there is more -- there is a larger wound opened for a longer period.

Q. Okay. Returning to 12844, Dr. Hall, your surgical note -- your operative note. Would you read what it says under "Indications"?

A. It says, "This patient is a 63-year-old male, about 11 months status post a left total knee arthroplasty. He has had significant pain ever since the arthroplasty was performed. X-ray showed the tibia plate to be put in 70 degrees of anterior slope rather than 70 degrees of posterior slope. Lateral x-ray confirms levering off the tibial tray anteriorly. Bone scan shows increased activity around the tibial tray and also the patella. After discussion of risk and benefits, the patient elected to have the arthroplasty revised."

Q. So based on your x-ray, you were able to -- well, in fact the court, I think, asked you whether or not you measured or estimated the

deviation in slope.

At the time you conducted the revision surgery, your analysis was 7 degrees anterior slope; is that correct?

A. That's correct.

THE COURT: Now, is that new information from the actual surgery, or are we still talking about the x-rays?

THE WITNESS: That would have been from the preoperative x-rays.

THE COURT: Okay.

BY MR. KAPOLCHOK:

Q. Looking at your actual procedural note, Doctor, on the next page, 12845. Without reading it or going through it step-by-step, I note that you refer to trials during your procedure; is that right?

A. That's correct.

Q. All right. And is a trial another name for trying it, see if it's right?

A. Correct. Before you implant the final components.

Q. Now, the trials are done a number of times, aren't they?

A. Yes. Usually.

Q. In different stages?
A. Yes.
Q. Is that fair?
A. Yes.
Q. Take us or -- take us through the trials that you perform and explain to the court a little bit about the fact that these manufacturers give you trial components that you try to fit, and then I guess throw away, and then put the final ones in. Could you just take us through that?
A. Well, after you --
Q. I know I simplified it too much, but...
A. After removing the original components, then you have to re-cut the bone to fit the new components. Then they have trial components, which are metal as well, but they're not glued or cemented in place; they're just what we call pressed or basically pounded into place.

And then you could use -- then they have plastic trial liners too that also go into the base plate. But again, they just lay in there, they're not securely fastened. They basically pop in and out.

And then with those in place you see how much range of motion you have, and then check the

stability both in various degrees of flexion and extension to see if the collateral ligaments are stable.

The type of revision components we were using substitute for the collateral ligament. So in his case we wouldn't have expected to find much collateral or laxity. So we were checking for range of motion, and in a primary situation you're checking for stability.

Q. Now, the patient is in what kind of position when you're doing the surgery?

A. They're on their back.

Q. And do you actually then pick up the leg and move the knee to like a 90 degree bend or something to that nature?

A. Basically, put their knee -- hold their knee like this, or their leg like this, and then put them through a range of motion. And then try side to side to check their ligaments for stability.

Q. Do you have an opinion, Doctor, whether or not in performing that trial -- it's like a trial run, right?

A. Correct.

Q. -- that an orthopedic surgeon would be able to see that, like in this case, you had a 7 --

what you determined to be a 7 degree anterior slope as opposed to a 7 degree posterior slope; was that something an orthopedic surgeon should pick up if he tried the knee?

A. It should be apparent during the trial. As the knee goes from flexion into extension, the force from the back tends to open up the front. You see either the tibial base plate coming off the bone or else the liner coming off the tibial base plate.

THE COURT: If it's tilt the wrong way?

THE WITNESS: Yes.

BY MR. KAPOLCHOK:

Q. Are you comfortable, Doctor, in telling us then, that in performing this revision, it was done to correct this malposition?

A. Based on the evidence I have, those are the diagnosis and that's why we offered the surgery, yes.

Q. Was it also your opinion, then and now, that Mr. Crisco did not have an infected knee at the time you did the revision?

A. That's correct.

Q. And is it also your opinion that Mr. Crisco did not exhibit reflex sympathy dystrophy

at the time you replaced his knee components?
A. That's correct.
Q. And is it also, Doctor, your opinion that the malposition of 7 degree anterior slope as opposed to 7 degree posterior slope, is beneath the standard of care?
A. Yes.
Q. Now, the knee that you installed in Mr. Crisco was -- you identify on this exhibit as the Zimmer?
A. Correct.
Q. All right. Did you install it with a posterior slope?
A. Yes.
Q. Okay. Is that built into the component, or is that done by re-cutting the tibial tray -- excuse me, the tibia?
A. It's done by cutting the tibia. And I'm trying to remember. Zimmer has gone through different iterations. At one point they had a -- the base plate was perpendicular to the long axis, and then the slope was built into the liner.
Now they're all -- it's -- the cut is 7 degrees, and so the liner is symmetric. And at this point in time I can't recall which way it was.

Q. To get the proper slope, does the manufacturer provide you, Doctor, any tools or equipment to help you get the right angle?
A. Yes.
Q. And describe for us what you use?
A. Well, for a primary or first time knee, we use a -- it's called an extramedullary, which is a -- basically a rod that clamps onto the leg, and you make sure that it's parallel to the front part of the tibia, and then that's your reference line. And then it has a jig that attaches to it that has a slot in it that you make your cut through.
Q. Is the jig also called a cutting block?
A. Yes.
Q. All right. Okay. And so this is a hardware that you attach to the outside of the leg?
A. Yes.
Q. Is there a different way to help you get the proper angle cut to the tibia?
A. The alternative way is to put a metal rod down the shaft of the tibia far enough down to engage the long axis, and then that becomes your reference point. And then the jig is attached to that, and you can use that for primaries or

revisions.

Q. How -- is the rod just pushed into the bone, or is it drilled, or how is that done?

A. You have to make a pilot hole for it first with some sort of reamer, usually by hand.

Q. What is your preference, or which type do you use?

A. Well, for primaries I use the external alignment to guide the rod that clamps on, and then for revisions usually intramedullary.

Q. Okay.

A. Which I think all systems require that for revision.

Q. So in this case you had to use the in -- repeat that for me.

A. Intramedullary.

Q. Intramedullary. Is that what you had to use in this case?

A. Yes. For the revision, yeah.

Q. How did Mr. Crisco's revised knee go at first?

A. Well, initially he did very well and actually left the hospital fairly quickly for a revision knee. But then shortly after being discharged he came back in with swelling in his knee

and it turned out to be infection.

Q. You typically have an x-ray done right after the knee implant is done, in this case a revision, to check on alignment and whatnot?

A. Yes.

Q. And do you recall what the results were in this case?

A. I don't have a notation here, but I can -- I normally take the x-ray in the recovery room. Unless there was a problem during the surgery, then I'll take it in the operating room. So it's something I look at after the surgery, but I don't seem to have a note here that indicates.

Q. Okay. Let me -- let me ask you to look at Exhibit 7, Doctor. Reference No. 12846.

Do you have that?

A. Yes.

Q. That indicates Johnnie was discharged the 11th of November; is that right?

A. That's correct.

Q. Okay. There's a reference to the intraoperative cultures. Are those -- are those repeated while he's in the hospital, or are those just done during the replacement surgery?

A. They're done during the surgery, but they

take several days to have a final result.

Q. And you state, "The patient progressed rapidly with physical therapy and by the time of discharge was tolerating" -- what's the "OP pain medications"?

A. Oral pain medications rather than intravenous.

Q. Okay. "Regular diet. His wound looked well and he was ambulating independently." Meaning what, he was walking without assistance?

A. He was able to get in and out of bed by himself, go up and down the stairs by himself, using either a walker or crutches.

Q. Okay. Within four or five days? Four days?

A. Yes.

Q. Okay. You go on to say, "The patient may weight bear as tolerated. And then start physical therapy," right?

A. Correct.

Q. So, fair to say, Doctor, so far, so good?

A. Yes.

Q. Were you pleased with the result?

A. Like I said, to go home four days after a

revision surgery is very quick, it's pretty remarkable.

MR. KAPOLCHOK: Your Honor, would it be acceptable at times for me to excuse Mr. Crisco? He's taking some medications that kind of --

THE COURT: Not a problem. Whatever he needs to --

MR. KAPOLCHOK: -- result in kind of a, you know, a need to go to the restroom.

THE COURT: Not a problem.

MR. KAPOLCHOK: All right. Thank you very much.

BY MR. KAPOLCHOK:

Q. Doctor, could you look next at Exhibit 7, 12847.

Do you have that?

A. Yes.

Q. What's going on now? It's about a week later, not even that much later. What's happening with Johnnie Crisco?

A. He's being readmitted to the hospital on the 15th of November, because he had been his doing physical therapy, felt a pop in his knee and had increased pain and swelling.

Q. Okay.

A. So he presented to the emergency room.
Q. What do the labs tell us, Dr. Hall?
A. Well, he's got a white count of 22,000, which post-surgery for several weeks usually is -- can be fairly normal, because the stress of the surgery can elevate your white count, but it can also be elevated from an infection.

And then we took some fluid off his knee for gram staining, which is basically just an examination for bacteria and then a culture where they try to physically grow them.
Q. Okay. Let me ask you to turn to the next in line exhibit, Exhibit 7, 12850.

Is that the -- I notice the physician is John E. Hall. That's a different doctor, emergency room doctor?
A. That's correct.
Q. All right. And Doctor -- that Dr. Hall indicated that Mr. Crisco had a low grade fever; do you see that? Review of systems.
A. Yes.
Q. And in addition to the CBC rate of 22,000, there's some indicate -- or some numbers attached to a hemoglobin and a hematocrit rate, 13.6 and 31.2.

What significance is that, if you know?

A. Well, hemoglobin is the oxygen carrying part of the blood, and basically that's checking for anemia. After a large surgery oftentimes the hemoglobin will go down significantly. 13.6 actually is probably within the normal range. And for somebody who just had a revision surgery, or a large surgery, that would be a pretty good hemoglobin.

Q. Okay. Now, Dr. Hall, do you remember that you called in right away to see him?

A. Yes.

Q. Okay. And what was your concern?

A. Well, one of the concerns was infection.

Q. Okay. And as a result of that, what did you do, in terms of consulting, or what did you do?

A. Well, we got the -- you know, aspirated the knee or took fluid off and sent it off to the laboratory and it did show bacteria. So I got an infectious disease consultation from Dr. Bundtzen.

Q. Okay. Robert Bundtzen?

A. Correct.

Q. And his specialty is infectious disease?

A. Correct.

Q. In terms of treatment for the infection

then, did Dr. Bundtzen essentially kind of take over that aspect of the treatment?

A. More the antibiotic selection and the route, whether it was going to be oral or intravenous and for what length.

Q. Okay. Now, was there some surgical intervention that immediately conjoined or joined up with Dr. Bundtzen's antibiotic treatment?

A. Once we had evidence of infection on the labs and he was -- we did a surgery to try to salvage his knee by washing it out and exchanging the plastic liner for a new plastic liner.

Q. Okay. Looking at Exhibit 7, 12852, which looks like a note, chart note from Dr. Bundtzen, isn't it?

A. It is.

THE COURT: I'm sorry, that was 58?

MR. KAPOLCHOK: 12852, judge.

THE COURT: 52.

BY MR. KAPOLCHOK:

Q. And Dr. Bundtzen writes, "The patient says that his knee felt great for the first day or two after he went home, after the procedure, but then an aspiration revealed an infection."

That's what you were talking about, the

cultures?

A. Yes.

Q. And it says, "Today he had an irrigation and debridement in polyethylene line exchange."

Is that something you did, Doctor?

A. Yes.

Q. It says, "Cultures are growing staph aureus."

I guess it's kind of common knowledge to hear about staph infections. Is this a particular type of staph infection, or what is staph aureus?

A. Staphylococcus is the type of bacteria, and then there is subgroups within that, and staph aureus is one of them. And it's one of the more common infecting organisms of joint replacements.

Q. Okay. Dr. Bundtzen on the next page of his note says, "Johnnie now has a temperature of 101 degrees."

Do you see that?

A. Yes.

Q. Okay. Dr. Hall, would you take a look at Exhibit 12854. And my question is this: Is this chart note of yours, does that kind of fully describe what you've talked about a few minutes ago, in terms of debridement, liner exchange, and that

sort of thing?
A. Yes.
Q. Okay. What's the thinking behind removing and replacing the polyethylene liner?
A. Well, part of the procedure, you're washing things out with basically a fancy water pick, which is a high pressure pulsing water. And there is a space between the plastic and the metal base plates. And unless you take that out, you can't really get access in there to clean it out real well.
So you take the plastic out so that you can wash that surface along with everything else, and then put a new one in at the end of the procedure.
Q. Let me ask you to go back to Exhibit 2, Doctor, which are your office notes. And if we could look at 5007.
We're in now to December. Actually, the day after Christmas. Do you see that --
A. Yes.
Q. -- note?
A. Yes.
Q. And you write, "The patient is 63-year-old male seen in follow-up of removal of an infected

left total knee. Date of surgery was the send of November."

Now, is that different than what we were discussing of the removal of the -- of the polyethylene liner?

A. Yes.

Q. Tell the judge what actually transpired in November.

A. Well, the original surgery was in attempt to try to salvage the knee that he had in place. If you can get rid of the infection, then that would be his last surgery. Unfortunately, his infection continued to get worse even with the antibiotics, and that surgery and his pain got worse.

And so at that point we decided that that approach had failed. And so the next step is to remove all the metal components, and then place a block of cement in the gap that's created and a block of bone cement that has antibiotics in it. And then go through another period of IV antibiotics to try to eradicate the infection.

Q. How was Johnnie's leg immobilized while you do that? Is it put in a cast or --

A. Either a cast or a brace. In this case we used a cast.

Q. So am I correct in visualizing that you take out the knee components and you actually pack antibiotics in that area?

A. Well, you take the cement and basically just physically form a block outside of the knee.

Q. Right.

A. And once that's hardened, then you put it in the gap where the metal components used to be, so it doesn't all just scar down.

Q. Oh, okay.

A. So that when you come back later you have space to work with to put a new knee in as opposed to everything being scarred down.

Q. Without going through all of the chart notes, do you have a -- based on your review, Doctor, do you have a recollection on how Mr. Crisco responded to that antibiotic surgical approach?

A. At least in combination with his laboratories, those -- the ones that we were using to track his infection returned to normal. And then we did re-aspirate the knee at the end of this antibiotic course, and those cultures were negative.

Q. Okay.

A. So all the evidence we had is that we had eradicated the infection at that point.

Q. Okay. Looking -- if you're still on 5007, Dr. Hall, if you go to 5008, we are now into January of '02.

It looks like Mr. Crisco's antibiotics have been discontinued; is that right?

A. That's correct.

Q. And your physical exam shows no warmth or edema. That's -- edema is swelling?

A. Yes.

Q. All right. So that's good, I take it?

A. Yes.

Q. All right. And you were talking about the knee was aspirated.

Is that what you just told us, to run another culture to see what -- whether there was evidence of infection?

A. As a final check before proceeding with the next surgery, yes.

Q. Okay. And that came back negative?

A. Correct.

Q. All right. So I take it everyone's hopes were pretty high?

A. Yes.

Q. As of the 8th of January?

A. Yes.

Q. All right. What followed that then? Did you put another knee in?
A. Yes, we did.
Q. Okay. Same type of -- or same component, the Zimmer?
A. Yes.
Q. Now, Mr. Crisco had had a higher risk of infection when you replaced the Profix knee. He is now having a re-revision; is that proper English, medical English?
A. Yes, I guess you could say that. Or a second revision, I guess.
Q. A second revision.
A. Yeah.
Q. All right. Do you know -- and I don't know if there are any studies on this. But do you know whether his risk of infection now is even greater because of the revision?
A. Well, the first revision was not for infection, so the literature would say this two-stage protocol that he went through with removing everything and putting the antibiotics for infection usually has a success rate in the neighborhood of 90 percent.
Q. And has that been your experience?

A. Yes.
Q. If you would look at Exhibit 7, Doctor, 12858.
Again, is that a clearance by Dr. Bundtzen to proceed with this second revision, or am I reading that wrong?
A. No, that's correct. It's a preoperative medical clearance.
Q. Okay. Is it your practice to have either an internal medicine doctor or, in this case, since it's an infection issue, to get a preoperative clearance from a doctor with those subspecialties?
A. It depends upon the -- basically the complexity of the surgery and also the health of the patient, so --
Q. Okay.
A. -- for a revision surgery, generally we'll get an internist or somebody to do a preoperative medical clearance.
Q. All right. 12861, Doctor; do you have that?
Is that the operative note for this second revision?
A. Yes.
Q. And does that indicate, again, that you

took fluids and tissue samples to see if Mr. Crisco's knee was free of infection?

A. Yes.

Q. And how did they come out; do you recall? Or is it documented here?

A. Well, the gram stain is something that the laboratory does within half an hour, so you have that information available during the surgery. And that was -- they didn't see bacteria on the fluid when they looked at it under the microscope.

Q. The next page, Doctor, 12863, says, "All cultures from the time of surgery remain negative at the time of discharge."

This is five days after your second revision?

A. That's correct.

Q. Okay. So you had all the results by then?

A. The -- one subset of cultures, which is called anaerobic, can take up to six days. The original bacteria they have as staph aureus shows up on the other type of culture, which are called aerobic cultures, so we had that information by that point.

Q. Okay. Good. And so now Mr. Crisco is out

on the 30th with his new knee?

A. Correct.

Q. And again you write, "He is ambulating independent."

So again, that's a fairly quick recovery and discharge for a second revision?

A. Yes. Especially considering that he basically had been functioning without a knee at all for two months.

Q. Two months; okay.

All right. If I could refer you back to Exhibit 2, Doctor, document 5012, to establish kind of a time line here.

That's your office chart note dated February 7th, 2002; is that correct?

A. That's correct.

Q. All right. What's happening now?

A. He's beginning to have some drainage from his wound.

Q. Okay. The next document, Doctor, 5013. Again, your chart note dated February 11th of '02. You state, Mr. Crisco's pain is improved. He's only taking Percocet occasionally. And he's referred to physical therapy; is that right?

A. That's correct.

Q. All right. So into the first part of February, things are going pretty well; is that fair?
A. That's fair.
Q. All right. And he's progressing towards full weight bearing.
A. Correct.
Q. If Mr. Crisco had reflex sympathy dystrophy prior to your first revision back in November when you put the new knee in, which eventually became infected, would that -- let me back up.
You don't treat RSD with surgery, do you?
A. In general, you try not to.
Q. Based on your experience and your medical training, if Mr. Crisco had RSD when you did the first revision and corrected the slope, would you expect the RSD to disappear after your revision surgery?
A. Unless specific steps are taken to try to prevent that, it will flare up and get worse.
Q. It would flare up and get worse, that would be your --
A. Yes.

Q. -- take on it.
Thank you.
MR. KAPOLCHOK: Your Honor, would this be a convenient time to take a short break?
THE COURT: We'll be in recess for ten minutes.
MR. KAPOLCHOK: Thank you.
THE CLERK: All rise.
Matter stands in recess for ten minutes.
(Off record.)
THE CLERK: All rise.
His Honor the Court, this United States District Court is again in session.
Please be seated.
MR. KAPOLCHOK: Thank you, Your Honor.
BY MR. KAPOLCHOK:
Q. Dr. Hall, to continue our journey post-second revision, Plaintiff's Exhibit 2, page 5016, do you have that, your office --
A. Yes.
Q. -- chart note?
A. Yes.
Q. All right. What's going on with Johnnie at the end of February 2002?
A. It looks like his wound was doing better,

with some minimal drainage, and his laboratories were looking better.

Q. Okay. Was he able to walk? It says he's ambulating.

A. Yes.

Q. Do you see that?

A. Uh-huh.

Q. All right. And his labs are looking better?

A. Correct.

Q. All right. Again, is it fair to state that you were encouraged?

A. Yes.

Q. Could you turn to Exhibit 7 now, and I'm sorry about the flipping back and forth, but about a week later. It will be Exhibit 7, 12866.

A. I have that.

Q. Okay. What is that, Doctor?

A. It's an operative report.

Q. Okay. What's going on?

A. It has been re-infected and we've tried another attempt at salvage of his knee.

Q. What did you do?

A. The same sort of operation as previous, where we opened the knee up, take the plastic liner

out, strip out the lining of the knee, wash everything out with that fancy water pick, and then put in a new plastic liner.

Q. Okay. Was this the result of the return of the staph infection?

A. Yes.

Q. There's reference in a following document, Dr. Hall. Apparently Mister -- it's document number, again part of Exhibit 7, document number 12868.

It looks like Mr. Crisco was in the hospital from the 28th of February to March 5th. Am I reading that right? At the top.

A. That's correct.

Q. Okay. 12868; do you have that? Okay. Thank you.

It talks about the exchange of the tibial liner and the cultures of staph aureus under hospital course; do you see that?

A. Yes.

Q. And apparently Dr. Janis is involved.

Is that a partner of Dr. Makin?

A. No, he's another --

Q. I mean, Bundtzen?

A. He's an infectious disease specialist in

town, and Dr. Bundtzen was out of town for a few weeks. So they all are independent, but they cover for each other.

Q. And this reference under hospital course, Dr. Hall, to a Dr. Marbarger.

Now, Dr. Marbarger is a surgeon, is he not?

A. Correct.

Q. All right. What was his involvement in the treating of Mr. Crisco's flare-up or re -- problem with this staph aureus infection?

A. He placed the Groshong catheter, or the IV access, that was going to be used for the long-term IV antibiotics.

Q. Okay. And under discharge medications, it seems that Mr. Crisco was fitted with an infusion pump.

Is that related to the catheter you just told us about?

A. That's what's used to deliver the antibiotics intravenously through that catheter.

Q. So Mr. Crisco can basically get IV antibiotics at home?

A. Correct.

Q. Could you look, Doctor, at Exhibit 2,

5020. I'm sorry. 5021.

A. I have that.

Q. Okay. We're flying along into March now. We were back in February; this is the middle of March.

Could you summarize for us how Mr. Crisco is doing now?

A. He's doing better. His wound looks -- is healing. His laboratories were improving again. It looks like he's responding to the IV antibiotics.

Q. Would it be fair to characterize Johnnie Crisco's course in dealing with this infection as really cyclical?

A. Yes.

Q. In general, Dr. Hall, in terms of your interaction with Mr. Crisco -- and you were monitoring or involved, to some degree, in dealing with all these ups and downs of infection.

A. Uh-huh.

Q. Was Mr. Crisco a -- I guess the term of art, or the term you hear a lot, is a compliant or a cooperative patient?

A. I always felt he was compliant with what we had asked.

Q. Had there been any problems with

Mr. Crisco not following your advices or not doing what he was told to do?

A. Not that I recall.

Q. Would you turn to the next document, Doctor; 5022. It looks like we're in the second week of April now. And he's -- Mr. Crisco's in to see you. And you write, "The patient has had improvement with his knee. He is no longer ambulating with use of a cane."

So he's walking without either a cane or crutches or anything?

A. That's correct.

Q. All right. And he's scheduled to stop his antibiotics.

Is that what you write here?

A. Yes.

Q. Okay.

A. The IV antibiotics.

Q. Right. That's regulated and controlled by either Dr. Janis or Dr. Bundtzen, though, isn't it?

A. Correct.

Q. They make those decisions?

A. Yes.

Q. All right. So once again now, April 11th, Mr. Crisco was looking hopeful?

A. Yes.
Q. Okay. If we could skip ahead to August of '02, Doctor; 5029.
A. Okay.
Q. What's going on now? We're -- I went ahead about four months.
A. He did in fact have persistence of his infection. And one option was to just keep him on suppressive antibiotics for the rest of his life, which wouldn't eradicate the infection, but at least hopefully hold it at a level that he could tolerate the symptoms.
Q. Okay. Your conclusion then is adjusting antibiotics or another surgery. And it says, "The patient would very much like to avoid any further surgery."
So this in late -- not in late, in early August...
Would you look at 5030, which -- we're in February of '03 now; okay?
A. Uh-huh.
Q. What's going on with Mr. Crisco?
A. At that point he developed some lumbar spine problems and had seen several providers or doctors for that. But because of the infection in

his leg his treatment options were limited for that.

Q. Okay. Definitely no surgery; is that fair?

A. That's fair to say, yeah.

Q. Okay. Is the source of his infection thought to be -- or not thought to be. Is the source of infection his knee?

A. Yes.

Q. Okay. And if you would look at 5031. We're into April of '03 now.

Why don't you review your conclusions with us, Doctor, as they appear or as you recall them.

A. Well, basically, he had, you know, the persistent pain in his knee. And we talked about his -- he basically had four options, you know, either to continue as he was with the oral antibiotics for the rest of his life, or else have a surgery to try to relieve his pain.

And the surgical options were either an amputation, removing the components and fusing the bones together. Or else another attempt at the two-stage protocol to try to implant a knee that is not infected.

Q. Okay. Now, that -- all of those options,

other than the amputation had been tried; is that fair?

A. The fusion had not been tried.

Q. Oh, the fusion.

A. Yeah.

Q. Describe that for us. What is -- what's involved in the knee fusion?

A. Well, you remove all the knee components. And then either use a long metal rod that stands from the femur bone all the way down to the tibia bone and pack bone grafter at the interface, or the idea is to get the two bones to grow and together become one bone, one really long bone, essentially. Or else you could use metal plates to do the same thing, or in addition to the rod. It's to basically eliminate the knee joint.

Q. Now, if the source of the infection and the pain, as you refer to in here, it says, "Due to his increased pain in his left knee," I can understand how removing the components would help eliminate the infection, or eliminate the infection, but how would a fusion do that? Would the components come out?

A. The components would come out, assuming that it's a successful fusion, which means the bones

grow together, then there's no more motion at that point. And then, assuming it doesn't get infected, then you can just leave the hardware in forever.

Q. Of the options or choices that you discussed in that -- or in your note, which would have the highest likelihood of reducing the infection that Mr. Crisco has been battling now for a year and a half?

A. The amputation.

Q. Okay. Ultimately, Doctor -- and if you need to refer to the notes, you know, we can do that. But ultimately, I take it, you had a number of conversations with Mr. Crisco about trying to make a decision about these options?

A. Yes.

Q. And ultimately he agreed to or selected the amputation?

A. Yes.

Q. And it was an option that you offered him?

A. Correct.

Q. And do you professionally feel that it was a reasonable, or even a good choice, that Mr. Crisco made?

A. Well, if I felt it wasn't reasonable, I

wouldn't have offered it. And from the notes, his -- what he stated to me at the time was he wanted to have the operation of giving him the best chance of success with just one more surgery to try to minimize, and I think that was -- that would have been the amputation.

Q. Just to put some dates on this, Doctor. If you could briefly look at 5034, part of Exhibit 2. It looks like we're in to December 16th of '03.

And you write, "Mr. Crisco is leaning towards having the above-knee amputation." Then there's discussion of options. And you write, "I think the above-knee amputation would be his best choice to have one last surgery without having to worry about future surgeries on that leg."

That's basically just what you said --

A. That's correct.

Q. -- a few minutes?

A. Uh-huh.

Q. Okay. And then surgery was scheduled for the end of February --

A. That's correct.

Q. -- is that right?

A. Yes.

Q. Is there a reason -- it seems to be significantly out there, a couple of months out there. Did it have something to do with your schedule, or do you remember?
A. I don't recall.
Q. Okay.
A. But in -- you know, he had the chronic infection for quite a long time at that point, so a few months either way, I don't think, made any difference.
Q. Right. Okay. Could we go to Exhibit 7, 12888. 12888.
What is that, Doctor?
A. It's a discharge summary from his hospital stay for the amputation surgery.
Q. Okay. Actually, I handed you the page 2. It would be one, two...
I've got the wrong one here.
Yeah, that's what I was looking at.
So Mr. Crisco went in on the point in time, the 25th of February of '04, correct?
A. Correct.
Q. And then was discharged three days later?
A. Correct.

Q. Okay. And, I don't know, is -- any complications or problems with that surgery?
A. Not immediately.
Q. All right. Were there some complications or problems?
A. Yes. He came back later with a problem with the soft tissue coverage over the femur of the stump.
Q. Is that discussed in Exhibit 7, 12995? It talks about a revision of the left knee.
A. Yes.
Q. Okay. All right. We do need to cover this a little bit.
Do you have that one? 12995.
Okay. This is now in September of '04; is that correct?
A. That's correct.
Q. All right. So it's about six-and-a-half months after the amputation?
A. Correct.
Q. All right. Why is Mr. Crisco in seeing you; what happened to him and what help did you provide for him?
A. He was involved in an accident where the -- his -- end of his residual leg -- I think it

was an automobile accident -- was struck, and the soft tissue coverage on the end of the femur got torn free.

Normally, we like to have muscle covering the end of the femur, so you've got some padding between the skin and the bone. And, unfortunately, that tore free, leaving his skin directly underneath the -- or, excuse me. The femur bone directly underneath the skin, causing him problems with his prosthesis wear and with pain.

Q. So a jamming injury in an auto accident?

A. Yes.

Q. Doctor, Mr. Crisco was attempting to use a prosthesis or an artificial limb?

A. Yes.

Q. Do you get involved in either the fitting or the -- not the manufacturing, but the fitting and the education that's required to use that?

A. Usually not. It's handled by the prosthetist.

Q. Okay. And in this case, Mr. Crisco needed some surgical help because of an injury to the -- I don't know the medical term for it, but the stump of his leg?

A. Yes.

Q. Okay. Was this pretty close to your last involvement with Johnnie Crisco medically? I know my documents might have ended there, but do you have a recollection of any further medical involvement with Johnnie?

A. No further surgeries. I think I had seen him as a patient a few months after that, and then that was the last time I had seen him.

Q. Okay. Doctor, I'm just about done. I'd like to ask you about two other -- two other documents.

One is Defendant's Exhibit D-1. I'll hand that to you.

Do you have enough light to read?

A. Yeah.

Q. Okay. Doctor, before I ask you about that, I forgot one thing, and it's addressed in the medical records.

What is phantom pain?

A. After an amputation, sometimes patients will have a sensation of pain in the amputated part, which can persist indefinitely.

Q. Is it -- is it a very unusual phenomenon, or is it --

A. Not uncommon after amputation surgery.

Q. In fact, there's some protocol that doctors use to try to avoid that, isn't there?
A. Yes. There is things you can do.
Q. Right. And there is something that you tried in Mr. Crisco's case, wasn't there?
A. Well, in general, there is some things you can do during surgery, such as injection or blocking the nerves before you section them.
Q. Right.
A. And then afterwards -- or during the surgery have them have a specific type of anesthesia called an epidural and leave that in for several days afterwards to try to prevent that from -- cycle sort of starting.
Q. Doctor, I've handed you defendant's D-1, which appears to be a note from a Dr. Schumacher or Maker.
Do you have that?
A. Yes.
Q. Do you recall -- what is the date of that note?
A. May 8, 2001.
Q. All right. So that was before Johnnie Crisco saw you for the analysis of why his left knee was painful?

A. Yes.
Q. Do you remember, one way or the other, whether this was part of the records that Mr. Crisco presented to you from the Veterans Administration?
A. I don't recall. And I just mentioned VA notes in my chart notes, so I don't know.
Q. Okay. Do you know a Dr. Schumacher?
A. Yes.
Q. How well do you know him?
A. Just very peripherally through professional meetings in town.
Q. I'd like to compare his findings of May 8th, 2001, with yours, when Johnnie came in to see you and you did the bone scan and you did the additional x-rays. Okay?
The complaint to Dr. Schumacher was of the same painful left knee, Doctor?
A. Yes.
Q. He's only four months post-surgery. Mr. Crisco complained of pain with weight-bearing. Is that essentially what he told you also when he came to see you?
A. I believe so, yes.
Q. He had no complaint of significant back pain; that's consistent with the way he presented to

you?
A. Yes.
Q. Pain is not radicular in nature. What does that mean?
A. The distribution of pain, if it's -- radicular means from a nerve in the spine. And that usually follows the skin distribution that that nerve covers.
And so if it's radicular, it's usually a long, narrow swath, like the side of the leg or the side of the calf. If it's focal, just at the knee, that's usually not radicular.
Q. Okay. So it wasn't radicular with Dr. Schumacher, nor was it radicular when he presented to you?
A. No.
Q. No hip pain with motion. Do you recall Mr. Crisco complaining of hip pain when he saw you?
A. No.
Q. Okay. No fever or chills; same results when he saw you?
A. Correct.
Q. Dr. Schumacher notes the range of motion on his examination, and he talks about mild

effusion. What is that?

A. Effusion is fluid in the knee. So there was a small amount of fluid in the knee at that point.

Q. Okay. Do you recall whether Mr. Crisco had any small amounts of fluid in his knee when he saw you back in -- later on in October?

A. My initial chart note is that I didn't see it or appreciate an effusion.

Q. Okay. And then the test that Dr. Schumacher did included -- included what?

A. Looks like he aspirated the knee. And did a cell count on the fluid and also sent it for culture. And he did other laboratories, including a sedimentation rate, which is basically a marker for inflammation, which is -- a CRP is a C-reactive protein, which is also just a marker for inflammation, and then the white blood count.

Q. And Dr. Schumacher concluded, did he not, that he believes the pain Mr. Crisco is suffering was coming from his knee, correct?

A. That's his impression, yeah.

Q. Right. And his impression was that there was no infection?

A. That's correct.

Q. All right. And in fact, Doctor, when you reviewed several months later all of the labs from the government, from the veterans, none of them showed an infected knee, did they?

A. No evidence of that, no.

Q. All right. Doctor, could you look at Exhibit 1?

THE COURT: This is Plaintiff's 1?

MR. KAPOLCHOK: Plaintiff's 1, yes, Your Honor.

BY MR. KAPOLCHOK:

Q. Could you identify that for the court? It's a two-part document. It's a letter dated April 4, 2002, and then a letter dated April 2, 2002.

Could you just tell us what it is?

A. Well, the one dated April 4, 2002, is my response to Thomas Williams regarding some questions about Mr. Crisco's medical case.

Q. Okay.

MR. KAPOLCHOK: I move the admission of Plaintiff's 1.

THE COURT: Is there objection?

MR. POMEROY: I'd object if it's being offered for the truth of it is -- of the document

itself. I mean, he's -- as far as his testimony as to his opinion, he's testified to it. If it's being offered for some other purpose, I don't think I would object.

THE COURT: What does this tell us that we don't already know?

MR. KAPOLCHOK: Only that Dr. Hall held these opinions back -- back in April 4th of 2002, before even the amputation. And that was my main purpose in offering the paper.

THE COURT: Any further thoughts, Mr. Pomeroy?

MR. POMEROY: If it's just for the timing purpose, then I would not object.

THE COURT: I would admit for the purpose of reflecting the timing of the formation of Dr. Hall's opinions.

MR. KAPOLCHOK: Thank you.

(Plaintiff's Exhibit 1 admitted into evidence.)

BY MR. KAPOLCHOK:

Q. Dr. Hall, the last thing I'd like to do is ask you if there's a typo on that letter, on page -- well, the second page.

The second page begins, "Of the increased activity"; do you see that?

A. Yes.
Q. Okay. And then it goes down and it says, "Related to mild position of the tibial component," then it goes on to say, "This type of malposition."
Should that "mild position" be "malposition"?
A. Yes.
Q. All right. Could you change -- since you've got the original exhibit, would you change it yourself?
A. Is that acceptable?
Q. Thank you, Dr. Hall.
MR. KAPOLCHOK: If I might have just 20 seconds, Your Honor, to consult?
THE COURT: Certainly.
MR. KAPOLCHOK: Dr. Hall, thank you for your patience, especially going through these medical records in kind of a stumbling fashion, but I didn't know any other way to do it.
THE COURT: Mr. Pomeroy, you may cross-examine.
MR. POMEROY: Yes, Your Honor.
Which button do we push to turn the lights back on?
Thank you.

CROSS-EXAMINATION

BY MR. POMEROY:

Q. Good morning, Dr. Hall.

If I understand your testimony correct, you have -- other than your experience with Mr. Crisco, you've not used the Profix knee replacement that's manufactured by Smith & Nephew?

A. Not that I recall. I used some Smith & Nephew when I was in residency, but I don't think Profix was around back then.

Q. Okay. And do you know offhand how many manufacturers of knee replacements there are?

A. It's a pretty large number. Just for use in the United States, I would say there may be even as much as 40 or 50.

Q. What would denote a normal range of motion for a knee that's not affected arthritic, I mean, some -- just a regular normal healthy person, what would that individual's range of motion likely be?

A. Usually from full extension to flexion, anywhere from 135 degrees to maybe 140, 145.

Q. Okay. Would the starting range be zero?

A. Yes.

Q. To 135 or 140?

A. Yeah.

Q. Okay. The 0 degrees measuring extension?
A. Correct.
Q. And the second number being the flexion?
A. Correct.
Q. Good. And what -- after a total knee replacement, an acceptable range of motion would be 0 to 90 degrees or better?
A. Yes.
Q. You would not have the same degree of flexion with a knee replacement as you would with a healthy knee --
A. No.
Q. -- correct?
And when you examined Mr. Crisco in October, as I think you used the first document in Plaintiff's Exhibit 2, you indicated that his range of motion was 0 to 110 degrees?
A. Correct.
Q. And that's a good range of motion for an individual with a knee replacement; isn't that true?
A. Yes.
Q. And you testified that you believe that he -- Mr. Crisco's initial surgery was with an

anterior slope?
A. Correct.
Q. And you showed the x-ray from March 12th, 2001, to demonstrate that point to the court?
A. Correct.
Q. Now, you have before you a model with a knee replacement?
A. Yes.
Q. And now, if you had an anterior slope, isn't it true that you would not expect in physical finding to have flexion of 110 degrees?
A. You can. It just depends upon where the knee is loose. If it's loose in extension, you can still get that degree of flexion.
Q. Well, my understanding is that on your examination you did not find any loosening of the knee joint, because that was one of the things you were looking for and you said there wasn't any loosening.
A. That was with collateral ligaments. The ligaments on the side.
Q. Right.
A. That's a different part of the exam.
Q. So your testimony is that with an anterior slope you would still get normal flexion?

A. You could, yeah.
Q. Now, you showed the x-ray that you examined -- I mean, demonstrated to the judge, that was not a full-leg x-ray of the tibia, was it?
A. No.
Q. It showed about a quarter of the tibia, or maybe less?
A. Maybe, I don't know, a third.
Q. A third to a quarter?
A. Yeah.
Q. Would you agree that the best way to measure the long axis -- axis, A-X-I-S -- would be to take a full-leg x-ray and measure that axis from the ankle to the knee?
A. Probably, yes.
Q. Because anything less -- there is a range for misinterpretation, depending upon the individual's tibia, correct?
A. If they've had a previous deformity that you're not seeing on your x-ray. Otherwise, then, the anterior part of the tibia is sufficient.
Q. I mean, not every -- not every tibia is identical?
A. Correct.
THE COURT: I'm sorry, I didn't catch the

first answer. Was your answer that it is better to have a full-leg x-ray?

THE WITNESS: If you suspect that they've got some deformity like that where their tibia is abnormal.

THE COURT: Any reason to suspect that Mr. Crisco had such a deformity?

THE WITNESS: No, he's a pretty thin individual, and I thought I could see it pretty well.

BY MR. POMEROY:

Q. But you did not order a full-leg x-ray too?

A. No, I did not.

Q. And in all the x-rays that you've seen, there's -- there isn't a full-leg x-ray that you've seen?

A. Not that I've seen.

Q. Because if you did, then we'd have the Perry Mason moment.

After you saw initially Mr. Crisco in October 2001, you didn't contact any of the doctors at the VA to talk to them about his care or medical records, correct?

A. Correct.

Q. Did you request any additional medical records from the VA?
A. No.
Q. The only records that you were presented was what Mr. Crisco brought to you?
A. Correct.
Q. And you testified that the bone scan that you took was to show uptake in white blood cells?
A. Yes.
Q. And for a -- for a bone scan now, if you took a bone scan, such as the one you took of the patient one month after a total knee construction, you would expect to see an uptake in the region of the surgery; is that correct?
A. That's correct.
Q. And isn't it true that you see -- I mean, depending, again, variance from patient to patient, because not everyone is identical. But isn't it true that you can see hot spots in a bone scan for a long period of time after surgery?
A. Yes.
Q. And isn't it true that you can actually have hot spots up to a year after that total knee surgery?
A. Yes.

Q. And Mr. Kapolchok did not draw your attention to what had been Plaintiff's Exhibit 6. So I guess -- I'll move for admission of Plaintiff's Exhibit 6.

MR. KAPOLCHOK: That's fine. Sure. No objection.

THE COURT: Any objections, Mr. Kapolchok?

MR. KAPOLCHOK: No, sir.

THE COURT: Plaintiff's 6 is admitted.

(Plaintiff's Exhibit 6 admitted into evidence.)

BY MR. POMEROY:

Q. Can you identify that document for us?

A. It's a bone scan report from Providence Alaska Medical Center.

Q. And that's the test that you had ordered, correct?

A. Correct.

Q. And is there anything in the document or the findings or impressions of the radiologist that read this that indicated uptake in the patella region?

A. He doesn't mention the regions.

Q. Okay. But he did state that it's consistent with recent prosthesis placement?

A. Correct.

MR. POMEROY: Just a moment, Your Honor.
I think those are the only questions I had, Your Honor. Thank you.
THE COURT: Anything further, Mr. Kapolchok?
MR. KAPOLCHOK: Very briefly, Your Honor.

REDIRECT EXAMINATION

BY MR. KAPOLCHOK:

Q. The bone scan, Dr. Hall, you ordered, was one of the reasons to address the suspicion or possible RSD?

A. Yes.

Q. And was another reason to examine the consequences of what you saw from the government's x-rays of what we call malposition?

A. Yes.

Q. And, in your opinion, is the bone scan the best diagnostic tool that was available to help you make a diagnosis with respect to these two conditions?

A. Yes. If it's malposition, you would expect to see stress along the tibia and then also on the patella, and that's what I saw. So that, to me, fit with the previous concern about the malposition.

Q. And, in general, you were asked about the radiologist reading of the bone scan. And radiologists read x-rays when you order x-rays too, don't they?

A. Yes.

Q. And do you always read the films yourself?

A. Yes, I do. I often have difference of opinion from the radiologists. As a specialist, I just have to know one small area of radiology, just orthopedics; they have to know everything, so oftentimes, like I said, we have difference of opinion.

MR. KAPOLCHOK: All right. Thank you. That's all I have.

THE COURT: Doctor, before you go away. With respect to that exhibit, that x-ray that we were looking at, it's part 3-A of 6.

Is there -- do you have any reason at all to believe that that x-ray did not accurately reflect the angle that you were measuring?

THE WITNESS: No.

THE COURT: Okay. Thank you.

Did that lead to questions from anybody else?

MR. POMEROY: No, Your Honor.
MR. KAPOLCHOK: No.
THE COURT: Doctor, thank you very much for being a witness here.
May we excuse the doctor?
MR. POMEROY: Yes, Your Honor.
THE COURT: Thank you, sir. You're excused.
(Counter 11:24:45.)
* * * * *
(Counter 01:44:20)
THE CLERK: If you'd stand before me so I can swear you in.
Please raise your right hand.
(Witness sworn.)
THE CLERK: Thank you. Please have a seat in the witness box.
Please speak into the microphone at all times.
Please state your full name, spelling your last name and a current address.
THE WITNESS: My name is Umesh T. Bhagia spelled B-H-A-G-I-A. Address is 24676 Calle Largo, C-A-L-L-E, L-A-R-G-O. That's Calabasas, C-A-L-A-B-A-S-A-S, California, 91302.

THE CLERK: Thank you.

THE COURT: You may inquire.

DIRECT EXAMINATION

BY MR. POMEROY:

Q. What's your profession?

A. I'm an orthopedic surgeon.

Q. And where are you currently practicing?

A. I'm in West Hills, California.

Q. And how long have you been practicing there?

A. One year.

Q. And, Doctor, where did you get your medical education?

A. I started in India with my medical education.

Q. And that's the nation -- that's where you were born, correct?

A. That's where I was born.

Q. And where did you go to college and medical school?

A. I was born in Baroda and I went to medical school in Baroda Medical College.

I also did an orthopedic residency there at the Baroda Medical College.

Q. When did you get your medical degree?

A. That was in 1986.
Q. And then you immediately went into a residency program?
A. That's correct.
Q. And what was that residency program in?
A. That's orthopedic surgery.
Q. And how long was that residency program?
A. That was four years. It was a three-year program and a fourth year option of chief residency that some of us are invited to do if we want to continue further, so I did my fourth year.
And then pretty much immediately after that I came to the U.S.
Q. And when you came to the United States, did you have to get -- I mean, what additional education or such did you need to obtain in order to practice in the States?
A. Here they do not recognize the residency, but they do recognize medical school. If you are able to clear the ECFMG, or what's now called the National Boards. So I cleared the National Boards and had to start again at the residency level.
Q. And where did you do your residency in the -- well, first of all, did you -- you did an internship?

A. Yeah, I -- you know, I wanted to do orthopedics, because I was an orthopedic surgeon already in India. It's very difficult to get in, so I went through a couple of years of internship and kept applying until I matched into a spot in Georgia.

Q. And where did you do your internship?

A. That was in New Haven, Connecticut, as part of Yale University.

Q. And was that internship specialized in any way?

A. It was a general surgery, general internship, yeah.

Q. And then, I believe, you stated in 1993 you were accepted into a residency program?

A. Yes. From '93 to '98 I was in Augusta, Georgia, doing an orthopedic residency.

Q. And within a residency program, are there areas of subspecialization or...

A. The residency is five years of orthopedics. You know, you go through different rotations. The rotations are set up with different -- what we call attendings. In other words, they are professors who specialize in different things.

And you do three or four months with each. And you go through the different years as -- and you are given more and more responsibility as you advance through the residency.

Q. And was that similar to the residency program in India?

A. Very similar. You know, it's more technologically advanced here, but the patient care and caring for people is the same.

Q. And what did you do after the completion of your residency?

A. After the residency, I had a little -- I had a payback to do to the U.S. Government as part of them allowing me to train and taking part in my training. So I came to work for the VA and Air Force Base here in Anchorage. That was in October '98.

Q. And how long were you at the Veterans Administration here in Anchorage?

A. I left in January of 2003. So a little over four, four-and-a-half years.

Q. And why did you leave?

A. Mostly for being close to the family. Family is all in California, so that's where my wife wanted to move.

Q. Your wife's family is in California?
A. My wife's family -- my in-laws are in California.
Q. I think most people understand that.
When you moved to California, where did you -- did you move to West Hills or --
A. No. I first went to Vasilias, which is a smaller town. You know, I felt that the transition from Alaska to LA would be too dramatic for me. So I went to a small town and practiced, but immediately realized that, you know, my interest was joint replacement, I wasn't doing enough of that work, type of work I wanted to do.
So a couple of years into it I decided that I needed to move on and look at a bigger place.
Q. And did you immediately go to the current practice in West Hills?
A. No. I took a year out of my practice and went and did a fellowship in joint replacement at the Mayo Clinic down in Scottsdale.
Q. And what was the focus of that fellowship?
A. It was hip and knee replacement. And mostly, you know, Mayo Clinic is a referral place,

so it's complicated joint replacement and large volume.

Q. And what's the nature of your practice currently in West Hills?

A. It's about 75 percent total joint replacement and 25 percent trauma and other things. So most of it is joints, hips and knees.

Q. And you're board certified in orthopedic surgery?

A. Yes.

Q. And what's the certifying entity?

A. It's the American Academy of Orthopedic Surgeons.

Q. And any other professional associations or memberships?

A. We are all members of the local, like California Orthopedic Society. In fact, I'm still a member of the Anchorage Orthopedic Society.

Q. And in which states are you licensed to practice medicine?

A. Currently in Arizona and California. I gave up my Georgia license this year, because I don't anticipate going back there.

Q. And you never did have an Alaska license, correct?

A. No. That is correct, I did not have Alaska license.

Q. And why is that?

A. The VA allows you to practice as long as you have any state license. And I had my Georgia license current when I came here. And since I was not going to practice outside the U.S. Government entities, which are the VA and the Air Force Base, I didn't need it.

Q. It's similar with lawyers. Several of my colleagues are not members of the Alaska Bar.

Obviously we're here because of the joint replacement that you performed for Mr. Crisco. One thing I'd like to sort of set the -- a little bit of background of how the orthopedic clinic at the VA was set up and operating in the fall of 2000 when Mr. Crisco first came to inquire into getting his left leg replaced.

What was the staffing at the VA then?

A. There were two orthopedic surgeons, Dr. Paton and I. And Ben Hull was the physician's assistant, although he probably had been in orthopedics longer than either of us. He was the -- all three of us would see the patients when they came. And each of us could independently see

patients and make decisions.

But there was quite a bit of discussion between the three of us, especially if someone was about to have an operation or surgery was recommended. Then Mr. Hull would bring us the x-rays and go over the appropriateness of the procedure.

And once that was done, we would then see the patient, either at the time of what's called a preoperative visit where we get consent and go over a few things, or an extra visit in between to clarify things.

Q. How many years of experience did Mr. Hull have in orthopedics, if you recall?

A. I recall him being an orthopedic PA for 18 or 20 years.

Q. And how long has Doctor -- is it Paton or Paton?

A. Paton.

Q. Okay. P-A-T-O-N?

A. Yes.

Q. When did he leave the VA?

A. I cannot recall, but it was -- I think it was 2001 or 2000. It's -- you know, it just seems, as I recollect, that Dr. Hall left ANMC. That

created an opening, and Dr. Paton went to ANMC. This is just what I seem to remember. I'm not sure.

Q. Dr. Paton was not with the VA at the time of Mr. Crisco's surgery?

A. I couldn't tell you. It was very close to that time, so he might have just left or been about to leave.

Q. Okay. When Mr. Crisco came in in November of 2000 to ask for the knee replacement, did you see him?

A. I saw him -- in November, no, I don't think I saw him. I think Mr. Hull saw him.

Q. Okay. And that would be standard operating procedure for the clinic?

A. Yes. He did show me the x-rays at that time, and we went over the films and said yes, you know, this is someone who may be a reasonable candidate for replacing the knee.

MR. POMEROY: Okay. And with the court's indulgence, I'll sort of wait to do the x-rays all at once rather than bouncing --

THE COURT: That's fine.

MR. POMEROY: -- back and forth.

///

BY MR. POMEROY:

Q. So when did you first meet Mr. Crisco?

A. I believe it was in January of 2001.

Q. And that would have been in conjunction for what?

A. That was a preoperative visit, where we go over the risks and benefits involved with surgery and make sure that, you know, there were no other issues that may prevent us from going ahead with that, with the operation.

Q. And what's the general preoperative workup?

A. The general workup is lab work, x-rays. A discussion of the risks and benefits. And the history and physical exam, which, you know, is variously done either by an internist or in our case Mr. Hull used to do the physical exam. I would go over labs and cardiogram, chest x-ray and all that, to make sure that everything's okay.

Q. And then would you meet with Mr. Crisco to explain to him the risks and --

A. Yes.

Q. -- I guess, pluses and minuses of potential --

A. Yeah, the pros and cons -- excuse me. The

pros and cons of the surgery. Also go over examination, you know, one more time to see if there's any instabilities, deformities that need to be corrected. Look at the x-rays again to see what exactly -- we call it templating the x-rays, or measuring out the bones to see approximate type of implant or the size of implant that will be needed.

Q. And what were the risks associated with this kind of surgery?

A. The risks, you know, pretty much are standard for all knee replacements with little change in the frequency of percentage based on what you've had before. And, you know, because of previous operations, the risks of infection would be slightly higher. And the risk of stiffness, actually, would be higher. And some risks of persistent pain would be higher based on previous surgery.

Q. And Mr. Crisco had previous surgery on his left knee?

A. He had -- yes. Because there was staples. Staples meaning, you know, these metal clips in the tibia, which we see on an x-ray, that had been placed from an osteotomy that was done a long time ago.

Q. And what is an osteotomy?
A. An osteotomy is cutting of the bone to realign it. And then it's just fixed with the staples. It can be fixed with plates or other things, but it works for a while.
Q. And what kind of osteotomy had Mr. Crisco had performed?
A. This one is called a high tibial osteotomy, so it's in the upper portion of the tibia, or the leg bone.
Q. And actually, would it help if -- sort of with the little knee demonstration to show sort of what would have been --
A. Sure.
Q. -- done? I'm just -- (indiscernible).
A. So the osteotomy that is done is in the upper portion. And what frequently happens is the knee wears out more on one side than the other, which causes a change in the alignment.
And to realign it, we take a wedge of bone out from the proportion, and then close it here so that the leg becomes realigned and the weight-bearing axis is improved.
Q. And I think the records show this had been done several years before.

A. That is correct.
Q. But you can still -- there's still evidence of that osteotomy on the x-rays that --
A. Yes.
Q. -- or at least the preoperative x-rays?
A. Yes.
Q. And was Mr. Crisco a good candidate for a knee replacement surgery?
A. Yes. Based on both the complaints of progressive pain and difficulty with activities, as well as loss of joint space on the x-rays, and spur formation, he would be considered a good candidate.
Q. And you obtained Mr. Crisco's consent for the operation?
A. Yes.
Q. And would you please describe the operation that you performed.
A. Yes. The operation is performed in the supine position with the patient on the back. Anesthesia is given, which is either spinal or general. I do not recollect which it was.
The leg is then elevated. It's prepped with some antiseptic solution. The leg is elevated to get the blood out of the leg and a tourniquet is

applied, which is a big cup that is applied to a proportion of the leg to prevent bleeding at the time of surgery.

After that, an incision is made on the front of the knee. It's a straight up and down incision, which is anywhere from 5 to 6 inches long. Once you are inside the skin and the tissue, the tendons are visible.

We make an opening around the kneecap along these tendons. And then the kneecap is shifted to the side. And oftentimes it's what we call everted, so it is flipped over. Then we can get inside the knee. And we are looking at it something like this.

Q. And that's -- it's -- you have the knee then --

A. The knee is bent.

Q. -- bent?

A. Yes. The knee is bent so we can look inside. And then the remnants of the cartilage or the ligaments are removed.

In Mr. Crisco's case, one of the ligaments, which is the anterior cruciate ligament, was removed. The one on the back side was retained.

Q. And why did you -- do you normally retain the posterior cruciate ligament?

A. It's -- both are very acceptable ways of doing it. At that time I was retaining the posterior cruciate ligament. And it seemed to work well with that system that I was using, which was the Profix knee.

After this we drilled the bone and go into the canal of the femur, and that's for placing an intramedullary alignment guide. So the length of the bone is then used as an alignment, because the rod is sitting in the center of the bone.

After that we measure the bone. We size it, so to say. And they come in different sizes three millimeters apart. So we label it -- in this particular system they are called C, D, E, F, G sizes.

We measure their size, and then that size cutting block, which is a jig or a block which has slots in it, is then placed on the end of the femur. This is placed in a specific amount of rotation and angulation. Again, there's a slight variation in how different people do it.

With that system, I was using five degrees of valgus, which is this alignment. Because that's

sort of how the angle of the femur is. And 3 degrees of external rotation, which is this way. That's what seems to be the best alignment on the femur.

Once that block is placed we make five cuts, which are called anterior, which is this one; posterior, which is that one; chamfer cuts, which are angled; and a distal cut which cuts here.

And all of these are about -- when you look at the bone, about 8 or 10 millimeters of bone is removed. And then the end of the bone is shaped in a five-faceted shape, which conforms exactly to the size of the implant you're going to use.

Once that is done, we can actually clean out the back side of the femur as well. We clean out more -- more cleaning of the spurs and all that is done.

Then we go over to the tibia. The tibia -- in those days I was using an intramedullary alignment, so we drill a hole into the tibia straight down into the canal. And the rod is sticking out here. You put the cutting guide or jig in front.

Q. And for the Profix knee that you were using, what kind of tibial cutting jig was used?

A. Two jigs are available. There's a 0 degree jig, which cuts at 90 degrees to the long axis of the tibia. And there's 4 degree jig available, which cuts a 4 degree posterior slope into the tibia. And I was doing a 0 degree.

Typically I would do 0 degrees for someone who had really good bending or flexion of the knee before surgery. And if they had trouble with bending, we wanted to take more bone off from the back, so we would do a 4 degree cut. And --

Q. And how was Mr. Crisco's range of motion?

A. As I recall, he had very good bending of his knee. I think it was 120 or 125 even before the surgery. So, you know, there was plenty of bending and I felt that it would be more stable to do a 0 degree cut.

Interestingly, this knee system has a 3 degree slope built into the polyethylene component. So if you're cutting at 0, you're actually giving a 3 degree posterior slope to the patient.

Q. So that the metal component would look at -- would appear to be at 0?

A. The metal would look like it's at 0 degrees, or what would be 90 degrees to the long

axis or length of the bone. And yet, because the plastic is shaped in a certain way, you have a 3 degree posterior slope.

So the principle of that slope is built into the plastic.

Q. Now, let me interrupt you for just a minute.

Now, Dr. Hall this morning testified that he uses a Zimmer knee?

A. Yes, that is correct.

Q. Are you familiar with the Zimmer knee?

A. I'm very familiar with the Zimmer knee.

Q. Okay.

A. That's what I'm using now.

Q. And let me -- why are you using the Zimmer knee now?

A. That has to do with institutional support and, you know, how the knees are brought in by the -- what's called the implant representative or company representative.

And each region has some implant company that is relatively dominant or that service the hospital well. And so here it just so happened the Smith & Nephew was -- the rep was very available and knowledgeable, so we use that.

And when I moved here, you know, the Zimmer rep was really the one who was there all the time and taking care of us, as far as bringing the right implants and being there, so I had no trouble switching. Any of the Smith & Nephew rep is hardly ever seen, so I don't want to be in a situation where you are doing a case and parts are missing or, you know, the rep is not available, so...

But during my training I was basically exposed to more than one type of implant. And I happen to do many hundreds of Smith & Nephew implants and Wright medical implants and Zimmer and DePuy.

So, to me, it was all equal based on how good the support is for the institution.

Q. Okay. And for the Zimmer knee, for the tibial cutting block, is that different than from the Smith & Nephew?

A. That is also available in different angles. You can use a 7 degree block. You can use a 3 degree block, which is also available. And, interestingly, the external alignment that we use, the way this alignment rod works, is you're able to change the slope, you know, even despite the fact that you have a 7 degree block, you can actually cut

it 3 or 4 or 5 degrees by changing a few things on the jig. And most people do that based on how much flexion there is or what stability they want.

Q. So anyway, going back to Mr. Crisco's surgery --

A. Yes.

Q. -- you're making --

A. So the tibial rod is inserted, the tibial cut is made. I made a 0 degree cut, which is perpendicular to the long axis of the tibia, which would be -- the long axis is here, and that is cut right across, which would be horizontal to the ground. And then all of that bone is removed.

Then we do look at -- then we do a trialing, you know, which is insert the trial components. The femur and the tibia. And a plastic component, the height of which again is variable. It depends on how much you have cut or how much looseness there is in the ligaments. So we have different sizes. They are two millimeters apart. Put that in. You check the balance of the knee, which is how stable it is in different degrees of flexion. And how much flexion you get.

At that time, you know, I was -- I was not replacing all the kneecaps, the back side of the

kneecap, depending on how it looked. I would assess it. And if it looked good and the tracking, which means it was tracking centrally in the groove in the femur, I would leave it alone.

In fact, that was -- I have abandoned that now that I'm mostly treating people who work in an office. And it's just interesting how folks up here in Alaska do so much better with the kneecap not replaced, because they're into the hunting and the crawling, fishing, kneeling and all that that we do. If you cut the back side of the kneecap and thin it out, you are at risk for a fracture or other things. So that's sort of customization for each patient.

Q. But in Los Angeles, people are more sedentary?

A. Yes. Definitely.

Q. And so I think the term that's used a little bit is patellar button?

A. Yes. The patellar button was not placed. So after the trial is done and we are satisfied that there's good range of motion, then we go ahead and place those same size implants, and those are cemented in place.

Q. You use one set to test or do the trials?

A. That is correct.
Q. And then it's a separate set --
A. Yes.
Q. -- that is then placed?
A. Those come in separate packs, and they're only opened once you have decided which ones to use.
And at the time of the trialing there's another opportunity to change things a little, release a few more ligament or cut the bone a little more here or there, depending on how the stability and balance and the range of motion is.
And, you know, there was 120 degrees of flexion at the time of surgery with no instability. Without any sign of the lift-off of the tibial component or any sign of pinching on the back side, which would suggest a problem with the slope.
Q. And when you say lift-off of the tibial component, what do you mean?
A. What happens is, you know, as has been suggested, if there was truly a tibial slope problem and this part of the component was up in the back, as you bend the knee it would pinch this component and tend to lift the front part of it off, because it's pinching. And you would not be able to bend it too far.

And if it lifts off, we then step back and say, okay, is the PCL too tight, or the posterior cruciate ligament, which is that ligament, do I have to release that to make it a little loose, or is the slope not enough and I have to re-cut it into a higher degree of slope.

And since it was a good amount of flexion, good stability, well-balanced knee, no lift-off, it was felt to be good.

Q. So there was no -- sorry. There's no lifting off when you were doing the trials for Mr. Crisco's knee?

A. That is correct.

Q. Okay. So that there was no additional cuts that you felt were necessary to be made?

A. That is correct.

Q. And after you then tested the knee, what's the next step?

A. After that, the real components are cemented in place. The knee is then washed out, which is just saline and irrigation. The tourniquet is then released. If there's any bleeding, that is controlled and the knee is then closed. Closing each layer that was opened in separate layers. Dressing is applied, and you go back to the recovery

room and get an x-ray.

Q. Okay. And then, for Mr. Crisco's operation, is everything -- I mean, is postoperative recovery care fairly normal?

A. Immediate postop, fairly normal, yes.

Q. Okay. Without going through all the records, I mean, the key problem with Mr. Crisco's operation was, as he has testified, and his friends have testified, as Dr. Hall I think touched upon, is that he had complaints of pain after the surgery. And from the time in January to the surgery until he kind of left the VA care and went to Dr. Hall, you were his primary physician for that care, correct?

A. Yes.

Q. Okay. So what did you do to try to get down to the root of what was causing his pain?

A. Yes, I did. And, you know, the recovery after a knee, especially if you've had previous surgery, is -- it can be a little rough. And, you know, the first few weeks we expect pain and swelling. You're trying to get active, you can have pain and swelling.

After that, once two or three months go by, it becomes concerning. You know, there should not be -- persistent pain is one thing, but if it is

progressive, or if it is -- just doesn't seem to be improving, we all worry, you know. And the number one worry that we all have with knees is infection.

The second worry is, is there early loosening of the implants, or something -- something like a hematoma or something that's causing the pain.

Q. And loosening, what would that entail? I mean, just that the cement didn't take or --

A. Yeah. You know, I mean, this is -- it's an unusual thing for an implant to come loose that early, but we have seen it, you know, it's been observed. And it's -- you're right. Either the cement loosens from the bone or the implant loosens within the cement. And that is sometimes observed.

So those are -- the main worry, of course, for persistent pain is infection. And so, you know, we -- we put those possibilities up and we got some lab work, which is typically what you would do. An ESR, or erythrocyte sedimentation rate, and C-reaction protein blood count, you know, those are the labs you would do, and they were fairly normalSo the possibility of infection was then considered low.

Also, the fact that somewhere between two

and three months the range of motion was quite good. And there were times when --

Q. Immediately postop you would not expect to have tremendous range of motion, would you? I mean, I'm talking the first, like, two weeks to a month?

A. No. The first -- it's quite variable. But, yeah, the first couple of weeks you don't expect more than 90 degrees, but certainly by six weeks you expect, you know, 100, 105 degrees. By three months you expect 110, 115, or more. You would expect that.

What I had -- what I observed was, you know, that there were times when -- and I think I saw Mr. Crisco quite a few times over that course. My routine was to see folks at two weeks, six weeks, three months, and six months. You know, but besides, I think, because of the persistent pain. And a couple of times I think because of a fall, you know, we worry that something came loose, or if there's a fracture we want to check it. So those are the times when we checked it.

And there were times when the knee looked very good. Barely any swelling and good range of motion. There were times when it looked swollen and irritated and tender, still with good range of

motion, but just not what we call a happy-looking knee.

Q. And what would the characteristics of a not-happy-looking knee be?

A. Well, mainly it's just complaints of pain and then swelling. So my concern always was infection, is there some infection going on that is subtle that may need a knee aspiration.

And oftentimes, you know, in cases where we cannot clearly find a cause or an infection, we will then send people for a second opinion, or at least have another set of eyes or hands feel it and see if we are missing something.

Q. And I think you testified like, and I think the records that we're about to -- at least twice Mr. Crisco came in reporting that he had fallen.

And what -- after a patient, I mean, Mr. Crisco or anybody, reports that they've fallen, you -- what do you do?

A. Examine the knee and get an x-ray, you know, make sure that nothing's out of place or nothing's fractured or came loose.

But my impression was, you know, that there was significant quadriceps atrophy, which is

the muscle up in the thigh. And once -- when you have that, you can have a knee that keeps giving out. Especially up and down stairs or on uneven ground. And so --

Q. And what do you do to improve that?

A. Physical therapy.

Q. And I think you said that also you sought second opinions from other orthopedic surgeons as to Mr. Crisco's condition?

A. Yes.

Q. And what -- how do you -- how do you go about doing that?

A. Usually we send out a note asking for an opinion. You know, both Elmendorf and the Seattle VA were considered our next level. You know, if we wanted to get a second opinion, we would send people to either Elmendorf Air Force Base or to the Seattle VA.

Q. And did you do that on sort of a normal basis?

A. Yes. It was, you know, mostly for -- for cases that were unusual or -- yeah, they're mostly for reasons like, you know, a back operation that someone has had three times and now you don't know what's going on, that sort of thing.

In this case there was enough confusion, I just wasn't convinced that we should be doing anything aggressive, because it was relatively early on in the recovery period.

Q. And I think you testified about sort of like a normal recovery period for a knee replacement, but is there a range, sort of within normal?

A. Even today in the world of minimally invasive and high tech, we think of most of the recovery happening in about three months. But full recovery taking about a year. That's the -- that's considered the norm.

Q. Okay. I'd like to, at this point, sort of run through some of the x-rays that were taken before Dr. Hall's care.

A. If I may say something. I believe that the overhead will show the x-rays quite well. If you want to do it that way, if it's okay. Do you want to try that?

Q. We can see. They're kind of -- they're kind of small. It's...

THE COURT: Because we can't see the whole x-ray, it would be helpful if you would be sure to let me know which x-ray I'm looking at.

MR. POMEROY: I think I'd rather just --
THE WITNESS: Okay.
MR. POMEROY: -- do the light.
THE COURT: I thought it was pretty good, actually, but however you want to do it is okay with me.
MR. POMEROY: (Indiscernible).
MR. KAPOLCHOK: Judge, may I move?
Thank you.
BY MR. POMEROY:
Q. Now, the first set of x-rays --
THE CLERK: Mr. Pomeroy, could you put on the lapel or turn the mike --
MR. POMEROY: Okay.
THE CLERK: Because --
MR. POMEROY: How is that?
THE CLERK: That's fine. And then when Dr. Bhagia speaks, he needs to be able to speak into the microphone as well.
MR. POMEROY: Okay.
BY MR. POMEROY:
Q. The x-rays have been sort of grouped or have been sorted out and marked by -- into groups based upon the date that the x-rays were taken.
So these first set of x-rays would have

been those that were ordered prior to his surgery, I think -- I think the date's November 2000.

A. The date on this is 10/17/2000.

Q. And can you describe what the x-rays show and why they were ordered?

A. The x-rays were ordered for complaints of knee pain that was progressive. The x-ray shows -- on the right side is a knee replacement that just is noted, by the way, and seems to be well-fixed. On the left side you see a complete loss of joint space.

On the medial side, or inner side of the knee, compared to the outer side. The outer side still seems to have some space. There's also metal clips; we call these staples. These were used to fix an osteotomy, which is cutting the bone, that you can sort of see here.

That is the front view of AP view. This one here is a skyline view or Merchant's view, it shows where the kneecap tracks on the end of the femur. Once again, you see spurs showing that arthritis is not only present in the medial side, but also in the patella femoral joint, which is that joint between the kneecap and the femur.

THE CLERK: Mr. Pomeroy, what exhibit

number is that, please?

MR. POMEROY: D-8 and D-9.

THE CLERK: Thank you.

THE WITNESS: These are lateral views of the left and right knee. Lateral meaning from the side. The right knee again shows a knee replacement. The left shows evidence of arthritis, spur formation, and also a change in the shape of the upper tibia, proximal tibia, from the previous operation.

An interesting or important point to note on these when you are planning out an operation is that the height of the knee joint, where it sits relative to what we consider normal knee, this joint is lower. And the patellar tendon, which is the distance between the end of the kneecap to the tibia, which is that tendon, is shortened compared to this tendon. You can see quite a bit of difference there. And that usually is, again, something which can cause knee pain, especially behind the kneecap, and problems later on.

Again, you know, even to an average person, if it's pointed out that the top of this fibula, which is that bone, is actually at the level of the knee joint or above, which means that joint

is lower compared to this, where even after replacement and cutting the bone that bone is still below the level of the joint.

So, you know, there's quite a bit of loss of height in that knee. Shortening of the kneecap. All factors which will cause mechanics of that knee to be abnormal.

BY MR. POMEROY:

Q. And that's --

THE COURT: Where does the stuff go that would otherwise make this left knee look right?

THE WITNESS: What happens is, you know, this -- an actual wedge of bone is removed at the time of the osteotomy. And depending on how much deformity you correct. Now, we think of one millimeter as correcting one degree. So if there's a 10 degree deformity that you are trying to correct, you will remove ten millimeters of bone. That's a lot of bone that is removed.

THE COURT: Okay. Thank you. That's what I was asking you.

BY MR. POMEROY:

Q. And so this would be, you know, described as osteoarthritis?

A. This is osteoarthritis. Along with the

previous osteotomy. And what is called the patella baja, or low patella or shortened patellar tendon. So, you know, those are just things that we would be noting as part of the preoperative planning.

Q. And that was D-12 that you were just referring to?

A. Yes.

Q. Which was -- which was of the left knee?

A. Right. D-11 is another view that is -- I consider it's an extra view. It's with the knee slightly bent and looking at it, it just shows the spurs a little better, but we don't truly really need that to plan out an operation.

THE COURT: That also shows, though, a considerable narrowing of the gap on the left -- the left knee as opposed to the right?

THE WITNESS: Yes. This is narrowed compared to that. Also, interestingly, where the knee sits, and if someone is standing both the knees should be about at the same level. It just doesn't look like -- you know, it looks like that knee is higher.

So there's -- there's some change in the mechanics there.

MR. POMEROY: That was D-11.

THE CLERK: Thank you.
BY MR. POMEROY:
Q. The next set of x-rays were taken on -- after your surgery, correct?
A. That is correct. This is dated 1/28/2001. This is an AP, or front view and lateral view. And, you know, the implants appear to be well-fixed.
Q. What would you be looking for to determine that they're well-fixed?
A. Any space between the implant and the bone would be considered a sign of loosening. There is really no space that's very good. We call it the interface between the bone and the metal is very quiet. We shouldn't see any loose -- or sort of a space or gap there.
So, you know, that space is the plastic -- in fact, you can see an outline of the plastic liner where it's taller in the front and narrower in the back giving you that sort of in-built 3 degree slope.
Q. And you're pointing to the x-ray at D --
A. 16.
Q. 16.
A. So that's -- and then these were just --
THE COURT: What were those two numbers?

THE WITNESS: D-16.
BY MR. POMEROY:
Q. And then this view is D --
A. D-13.
Q. -- 13.
A. These are two more views on the same day. There was -- you know, we don't -- we don't -- now I don't get four views; I get two views. AP and lateral. But at that time we used to get four views and obliques. Especially when someone had a deformity of the tibia like that, to make sure that we look at it in all different ways. And those two look -- look okay, as far as fixation and everything.
Q. One thing that Dr. Hall had mentioned when he was describing surgery, he said in his description of his replacement surgery, he described like a femoral notch this morning?
A. Yes. You might see that on a lateral view, which is that side view.
THE CLERK: I'm sorry, what exhibit number is that?
THE WITNESS: You can see it from the front here --
MR. POMEROY: That's D-16?

THE WITNESS: Yes.
MR. POMEROY: Yes.
THE CLERK: Okay.
THE WITNESS: You see it up in the front here where the -- where the anterior cut of the knee is made and if it runs into the -- into the bone. I cannot see it on this view. I'm sure that if you were to get -- because, you know, the two sides are not level. The outer side is higher than the other side of the knee. When you -- when you cut it on one side, it runs flush with the front of the bone. The other side, it's a little off, a little different. And you might see that. I don't see it here, but I don't know if he was looking at these x-rays. Unless I'm looking at the last ones that were done before Mr. Crisco went to him.
So, again, on this -- you know, at this point I would bet, since there is all this discussion about the slope, you know, since we don't have full-length x-rays, we don't know what references to use. And if we use the front cortex or anterior cortex like was suggested, relative to the bottom of the implant, you know, that -- that is at 90 degrees. I would need a ruler for that.
But one of the rough ways is since --

since this is 90 degrees, that angle, if you put this along that angle -- sorry. You know, along the anterior cortex, you will see that that is 90 degrees. Unfortunately, every view that is short is inadequate to tell true alignment.

So I really wouldn't -- wouldn't try to comment.

BY MR. POMEROY:

Q. Now, the next set of x-rays.

A. This is now March 12, 2001.

Q. And I think the medical records will show this was -- these were ordered shortly after Mr. Crisco reported falling on the ice in either early -- end of February or early March.

A. So these are D-17, 18, 19 and 20. And, once again, four views of the knee that do not show any fractures or dislodgement or loosening of the implant after the fall, which is the critical part you'd be looking at.

Now, here's -- here's a place where I will point out to you what might be considered a notch. You see that little --

Q. Divot?

A. -- little --

THE COURT: I see what you're pointing at.

THE WITNESS: Yes. So the little dip here. And if you -- and --

BY MR. POMEROY:

Q. Is that normal?

A. Is it normal? You know, we -- the notching of the femur is -- is one of those things where you say, is it never acceptable? We try not to notch the femur. And if the bone appears to be between sizes. In other words, if I was to put a bigger implant, right, like I mentioned, the implants come in three-millimeter increments. And if I put a bigger implant, now the knee is going to be too tight. I'd much rather use a one-millimeter notch and do the right size implant than use a bigger implant to avoid the notch.

So that's sort of -- you know, when they're in between sizes we have to pick. I wouldn't go and notch it, but you're four millimeters or five, because then you're weakening the bone. But a millimeter notch is what it looks like. And, you know, that's -- that's between the implants.

So here's another lateral view. Once again, you measure from the anterior cortex. To me that looks very much like it. And then the

polyethylene really shows the slope here. That to me looks very good. Nice and tall in the front, short in the back. That 3 or 4 degree slope is built in.

If you were to measure from here, the slope on the poly compared to the tibia, that's a good slope. You can see that here.

You know, all the -- all manufacturers are different. Zimmer does not have -- Zimmer poly, if you -- I wish we would have thought of this.

But, you know, if you hold the Zimmer polyethylene and the Smith & Nephew polyethylene in your hands, you will see that the Zimmer polyethylene is flat, better. And it's the same polyethylene used for the right and left knee. They don't differentiate between the two sides, whereas this knee would make a right-sided and a left-sided poly based on the different shape of the bone on the two sides. Because when you look at the top of the tibia -- if I can please have the model, I'll point that out.

Q. Sure.

A. Thank you.

When you look at the top of the tibia, you realize that the medial side of the tibia is bigger

than the lateral side. And so when you make the polyethylene, if you make both sides the same, you can use it for right or left. There's less inventory issues, less problems with everything. And then you just adjust it from the bone cuts.

Whereas this one, Profix knee actually made polyethylene that looked like this. It was bigger on the medial side, it was taller in the front, it had a slope built into it. So completely different mechanics and principles of implanting the -- that one. Compared to what I do now, I do the Zimmer now and it's quite different.

Q. So this shadow here is part of the polyethylene?

A. Yes. That shadow is the polyethylene.

Q. And that -- we're pointing at D-18.

A. So that's the model.

This is May 8th, 2001. D-21, 22, and 23.

Q. So about four months post-surgery?

A. About four months. And of course, you know, the reason for all the x-rays was still the concern. It's important to know that, you know, we had a lot of compassion and, you know, this concern about why this knee is painful, and, you know, we're

always trying to look for it. And patellar tracking, which is how it sits in that groove. Dent of the bone.

Another potential cause of knee pain where the tracking is off or the kneecap is tilted on one side, again, was not present. You know, this looked very good right in the center.

Once again, views with the implants. Well-fixed with no gaps that are seen anywhere. And again, you can see the shadow of the polyethylene, which is that light color. The soft tissue appears gray, and the plastic is completely dark because it's translucent. And so it -- you can actually see how it is built up in the front relative to the back.

Q. And so structurally you look at these x-rays which were D --

A. D-21, 22, 23.

Q. And --

A. Look at the x-rays and -- and become confused. Because everything --

Q. Can you explain what --

A. -- everything looks good here. The knee range of motion is good, but it is painful. So, you know, you try and explain that, you try and get

opinions and you list the possibilities.

And with knees, since the recovery time oftentimes is one year, especially given all the factors, such as previous operations, we tend to be a little more conservative and we wait a little. We wait and majority of the times things improve. One year, 15 months, a year and a half, things will improve with physical therapy, building up muscles, and they -- you know, patients become a lot more functional.

Q. Now, what's the date on the next set of x-rays?

A. This is 6/11/01. And -- yeah, 6/11/01. And again, no significant change that I would say relative to previous x-rays.

So I think by this time we had decided to go to Seattle for an opinion. And I think Dr. Schumacher had already seen Mr. Crisco by this time.

Q. In May.

A. So here's a magnified image, you know, once again trying to see if there's any separation. Sometimes you have to magnify the picture or, you know, if you're looking for subtle changes. And I don't see anything. You can again see the outline

of the poly. All of that tracking is good.

Then we have D-28 and 29 from 7/18 of '01. Once again, I would say no significant change. No sign of loosening, the tracking is still good.

D-30 and 31 from 10/1/01. I think these are all from October 1, 2001.

Q. Yes.

A. And it continues to show good tracking and no sign of loosening.

Q. And this is D-30 --

A. 32 and 33. From October 1, 2001. I think after this I was unable to see Mr. Crisco.

Q. I think Dr. Hall testified that he saw Mr. Crisco about a week later.

MR. KAPOLCHOK: May I ask the last exhibit number?

MR. POMEROY: D-32 --

THE WITNESS: 32 and 33.

MR. KAPOLCHOK: Thank you.

MR. POMEROY: I'd move for the admission of the x-rays.

MR. KAPOLCHOK: No objection.

THE COURT: Do you have a complete rundown of the ones that we're admitting? I ask that because there is some gaps, I think, in the numbers.

MR. POMEROY: There is one. I know that there is some duplicate x-rays on a CD-ROM that we're not going to be admitting. And there might be -- I talked with Mr. Kapolchok earlier, there might be some duplication between the x-rays that he's offered and the ones that we have.

I'd offer that when the evidence --

THE COURT: Let's do this, because I don't think there's going to be any kind of issue about this.

Somewhere along the way, if you would give us a complete list of the x-rays that we should have as the final exhibits.

MR. POMEROY: Yes, Your Honor.

BY MR. POMEROY:

Q. I think a good place to sort of pick up is when -- in the summer Mr. Crisco already having seen Dr. Schumacher, whose deposition has been taken and his exam notes been introduced.

Mr. Crisco is referred down to Seattle to see Dr. Chansky; is that correct?

A. That's correct.

Q. And who is Dr. Chansky?

A. Dr. Chansky was one of the consultants, or joint replacement surgeons at Seattle VA. He was

actually, I think, head of department at that time; I don't know what he is now.

Q. And did you give any like instructions or talk to Dr. Chansky before he saw Mr. Crisco?

A. No. We send a consult asking for an opinion. We don't want to bias them in any way, so we basically send the records. I think there was some problem with the records getting there. But we don't tend to call or bias their opinions.

Q. Did you speak with Dr. Chansky after he examined --

A. Yes.

Q. -- Mr. Crisco?

A. Yes. Because he called and advised me that, you know, he had seen Mr. Crisco. He was waiting for some of the records. And that his feeling was that there were a couple of possibilities. One of those being -- once again, I'll say that, RSD, or complex regional pain syndrome. But it wasn't definitive. You know, the feeling was that it was the better part of -- or it was prudent to wait, do physical therapy, and give it some time and then reassess at a later date.

Q. And Mr. Crisco was on pain medication during your period -- or time of treatment of him?

A. Yes. I was -- I was making sure that we were at least providing the pain medication and the relief.

Q. And was there ever a consult to like a pain specialist?

A. Yeah, I think so. You know, we -- the pain management consult was also requested. It's done for different reasons, in case there was something else like, you know, the back problems that might be contributing, if there was anything needed, as far as epidural injections. That's another way of treating RSD as well, is injections in the back or sympathetic blocks. We wanted to see if that was a consideration.

Q. Do you know if that was ever followed through on?

A. I do not know.

Q. But that was within the universe of treatment modalities that you were considering?

A. Yes.

Q. And then after Mr. Crisco returned from Seattle, from his two trips to the VA there, what was the treatment plan at that time?

A. At that time was basically pain management, physical therapy, and keep following,

wait, at least until about a year is up, so we know that, you know, the natural course of healing is done. And if there was still a persistent problem, then to look at some other possibilities, you know.

One of the -- one of the pieces in this puzzle was that he had a patella that was not resurfaced. And sometimes that can be a source of pain. And if it is persistent, you could go back in and revise the patella alone and it can take care of the problem, you know, so that's -- those were things on our mind, although I don't think we discussed that. But, you know, I think it was early.

Q. And at some time during your treatment of Mr. Crisco, did he express a desire to have a revision surgery performed?

A. Yes. And, you know, that's something that we see from time to time. You know, when the knee's not recovering like expected, the patient will oftentimes ask to have it redone or revised or removed. And, you know, we have to discuss and make that call.

Q. But that wasn't within the range of options you were considering in September, October for Mr. Crisco?

A. No, I would -- I would wait a long time before -- because the redo's are big operations. You know, even now when I do the revisions, I think a lot before redoing a knee that is painful and well-fixed. A loose knee, an infected knee, that has to be redone.

But a knee that's well-fixed and has pain, you know, you -- you really have to be quite sure that your intervention would take care of the pain. Or that you know that this is the cause of the pain that you're going after and that you will fix it. It's not good enough to do a big operation and the odds are a flip of a coin. You know, that's really not -- I guess I believe that that's not how surgery should be. You know, we like good odds.

Q. Now, you have mentioned several times here that Mr. Crisco had good range of motion. And I think you testified as to after-knee revisions -- or knee replacement surgery, a range of motion that you would be, you know, hoping for would be 0 to 120 or 125 --

A. Yes.

Q. -- is that correct?

If you had a tibial component that had an anterior slope, would you expect to see a

manifestation of that in the range of motion?
A. Yes.
Q. And how would it manifest itself?
A. Limited flexion or bending of the knee. And it is quite -- quite consistent that if you have a significant anterior slope instead of the posterior slope, the bending is going to be limited, oftentimes less than 90 degrees.
Q. So that if there was an anterior slope to the tibial component, you know, that should be -- you should be able to confirm that by the range of motion for the knee?
A. That is correct. And note that I'm saying significant anterior slope. Because there is -- even though we have jigs and you're making all these cuts believing that you're doing a 7 degree cut, you know, it's not always 7 degrees. There's a wide variation in the implantation of knees. It's well-documented. Very experienced, high volume surgeons who do a high volume of knee surgery, when you look at their x-rays and you do a CT scan analysis, which is the best way to check alignment is a CAT scan, they found that only 90 percent of the times can they get the knee aligned 0 plus or minus 3 degrees. So 10 percent of the knees are

outside that 6 degree range, which is considered ideal.

So, you know -- and then you have to say: what is a significant slope, what is a significant alignment or malalignment. And so what I'm saying is a malalignment or slope of significance would limit the range of motion of flexion. And even then I do not know if it would cause pain.

Q. Would an insignificant malalignment or malposition -- I think we've been using malposition -- would that cause pain?

A. No.

Q. And the last time that you saw Mr. Crisco was roughly in the beginning of October 2001?

A. Yes. Either late September or very early October of 2001.

Q. And after that you went to Dr. Hall, as I understand?

A. Yes. I do remember bumping into him in the hallway and talking about things. I never like to let my patients go, as in abandon them in any way, you know. Especially hard-working regular guys, you know. But I was advised not to see him.

Q. And who were you advised by?

A. By the administration.

Q. Okay. And finally, Mr. Crisco during his testimony said that when you saw him roughly towards the middle or end of February 2001 when he had the infected stitch, that you said something to the effect that -- or said to him and his wife, that you don't fix your mistakes.

Do you recall that testimony this morning?

A. I recall the testimony. I did not say that I -- if -- I will challenge you to ask every single person on earth who knows me, and they will tell you that that's not my -- I don't talk like that.

Q. Okay. So you have no recollection of what conversation Mr. Crisco may be --

A. No. It was a stitch abscess. The stitch needed to come out.

Q. You do recall the stitch abscess?

A. Yes.

Q. Okay. And I think, as maybe Mr. Crisco testified, that once that was taken out the infection cleared up?

A. Yes. That is fair. It's not a deep -- it's not an infection of the knee joint. It is a superficial, right around one stitch. Because these

stitches we use are sometimes -- they are dissolving stitches. As they dissolve, the protein from that can cause a reaction and what we call a stitch abscess. As soon as the offending stitch is removed, it goes away.

MR. POMEROY: Okay. Those are all the questions I have.

THE COURT: Doctor, did I understand you to say that a malalignment of that artificial knee would not cause pain?

THE WITNESS: What we were talking about is a significant malalignment. You know, the correlation between alignment of the knee implants and pain is extremely poor. We have all seen knees that are 15 degrees malaligned. And they are 20 years out from their knee replacement and doing perfectly fine. And we look at an x-ray and get alarmed that it looks like it's sloping or slanting, and the patient is extremely happy.

So, you know, the correlation between what the picture shows and the clinical is so poor, that we don't think of simply looking at an x-ray and saying: this is a source of pain. It has to be correlated with range of motion and how the patient is doing, what are the other possible causes.

So that -- you know, to say that a certain angulation of an implant is the cause of pain, that is not the case.

THE COURT: Thank you, sir.

Mr. Kapolchok.

MR. KAPOLCHOK: Thank you, Your Honor.

CROSS-EXAMINATION

BY MR. KAPOLCHOK:

Q. Good afternoon, Doctor.

A. Good afternoon.

Q. Do you recall I took your deposition when you were still working for the Visalia Clinic --

A. Yes.

Q. -- several years ago?

Okay. I want to jump around a little bit, because of the order of the testimony.

I'm looking at Dr. Chansky's note of his one visit with Mr. Crisco, dated August 27th, 2001; are you familiar with that?

A. I have read it in the past.

MR. KAPOLCHOK: Okay. Can we have Exhibit D-5 for the witness, please.

MR. POMEROY: Sure.

MR. KAPOLCHOK: Thank you.

I move the admission of Defendant's D-5,

Your Honor, so we can discuss it.

MR. POMEROY: No objection.

THE COURT: Exhibit D-5 is admitted.

(Exhibit No. D-5 admitted into evidence.)

BY MR. KAPOLCHOK:

Q. Do you need a moment to review it, Doctor?

A. Yes. Please.

Okay.

Q. All right. Do you see where Dr. Chansky, after visiting with Mr. Crisco on the 27th -- and not having any records and not having any x-rays of any sort -- said, "still my impression is that he has a reflex sympathetic dystrophy-like syndrome that would be best treated in Alaska by rehabilitation medicine, perhaps anesthesiology."

Were you made aware of this note at some time?

A. Yes.

Q. All right. Now, today you're telling -- you told us that you recall a telephone call with Dr. Chansky?

A. Yes.

Q. All right. You actually recall a telephone call with him about Mr. Crisco?

A. Yes.
Q. And there's nothing in the medical records; you made no entry in the medical records about a consult with a consulting physician in Seattle, no record whatsoever?
A. I will tell you that he did not call me specifically to talk about Mr. Crisco, but I had called him about another patient. And at that time he mentioned that he had seen Mr. Crisco and we discussed the case.
Q. And you remember, seven years later, without making any note or annotation in the records, any medical chart, that Dr. Chansky changed his opinion and it's not RSD anymore, it's "you should wait and see what happens"; that's what his opinion was? Isn't that what you told us a few minutes ago?
MR. POMEROY: Object to mischaracterizing --
THE WITNESS: No, that's not what I said.
BY MR. KAPOLCHOK:
Q. Okay. Tell me what Dr. Chansky told you that you remember.
A. No, I'm saying that's not what I said. What he -- what I said we discussed was that a

physical therapy regimen, which is exactly what's written in the note, would be appropriate, which is a rehabilitation regimen. And that as far as anything regarding redoing the knee, it is best to wait. Not that it is best to wait with any treatment.

Q. Okay. A few minutes ago, Doctor, you told the court that there is a well-documented high variation in alignment.

Now, do you mean alignment of the knee looking straight on, or do you mean alignment -- this is the foot -- of the knee in this position? Knee replacements.

A. I do not understand the question. There is a documented -- there are -- it's well-documented that alignment of the knee, when you measure from the center of the hip to the center of the ankle, when you draw a straight line, the line does not pass through the center of the knee.

When it passes through the center of the knee, that's called a neutral alignment, or 0 degrees. And 3 degrees on either side is considered ideal alignment. And if it is more than 3 degrees off, that's what I was talking about.

Q. You weren't talking about the slope of the

tibial tray on a knee replacement, were you?

A. No. There's very little documented about the tibial slope.

Q. Okay. Now, when I -- I would like to establish what the level of your experience was when you did Mr. Crisco's knee replacement, January 1, 2001 -- or January 10, I believe, 2001.

When did you take your -- you took a year off and did a fellowship at Mayo in Arizona?

A. Yes.

Q. When was that, sir?

A. Last year.

Q. Okay. And since that time, that -- excuse me. That was after leaving the Visalia Medical Clinic?

A. Yes. So it would be, you know, starting about two years ago until last year. So August of '05 to July of '06.

Q. And now what situation you're working in, you're not back to Visalia, you're in Los Angeles?

A. Yes, it's -- West Hills is about 20 miles west of Los Angeles.

Q. To work my way to January 10th, 2001 -- let me go back and understand your education.

In India you go from high school to

medical school; is that correct?
A. That's correct.
Q. So you're 17, 18, when you're in medical school?
A. Uh-huh. 18.
Q. 18. And then that's four years?
A. Yes.
Q. Okay. And then after that there is an internship?
A. Yes. It's three levels of what we call MBBS, which is the medical degree. Each year is about -- each MBBS is about a year and a half, so about four-and-a-half of medical school. And there's an internship, which is one year after that. And that is a rotating internship, much like we do here. We rotate through different specialties.
Q. All right. And then in 1989, after that, you left Bombay and came to the United States, correct?
A. Yes.
Q. And what occasioned that, sir? Why did you want to come to the United States in 1989?
A. Most of my wife's family was here, and so we sort of made that move.
Q. So your wife's family, they're also from

India?

A. Yes.

Q. And they had moved to the United States?

A. A long time ago, yes.

Q. Okay. So you wanted to join them?

A. Yes, we did.

Q. Okay. All right. And in order to stay in the United States, you entered into an agreement with the government to provide medical services, but you had to complete an acceptable medical education; is that fair? One that they accepted; I didn't mean to pass judgment on you.

A. Yeah. I don't know if that's how you would put it. You know, I myself don't know how to put it. It's called a J-1 visa. The J-1 visa is basically called an exchange visitor visa.

Q. Right.

A. And the premise of that is that they would allow you to train here with either the intent that you would go back to your home country, exchange visitor, go back to your home country for at least two years after you were done, and then you would be eligible to come back. Or, instead of going back for two years, you could serve an underserved area or U.S. Government entity for -- it has all -- it

has changed. Used to be three years. I think now it's five years.

Q. Okay. All right. And my understanding from your testimony then is that you began -- is it the Hospital of St. Raphael in Connecticut?

A. St. Raphael's Hospital, yes.

Q. In Connecticut. Now, is that -- did you tell us that was part of the Yale University Medical School?

A. That's the Yale affiliate, yes.

Q. All right. Now, that wasn't orthopedic work of any sort; was it general surgery?

A. There were two years there.

Q. Right.

A. The first one is called a transitional internship.

Q. Right.

A. Which is again rotating internship, different things. You do electives and internal medicine. And I think I did a couple months of orthopedics there as an elective.

And the second year there was general surgery. Which is, again, you know, it incorporates some orthopedics and some surgical training.

Q. No knee replacements there?

A. As part of the orthopedic rotations I would participate in knee replacements.
Q. In what way?
A. As an assistant.
Q. As an assistant; okay.
And then you went to the medical college of Georgia; is that right?
A. That is correct.
Q. All right. And completed their program. And they give you a certificate of graduation, correct?
A. Yes.
Q. And you were exposed to some orthopedic -- strike that. I apologize, I made a mistake.
You were exposed to some total knee replacements while at the medical college of Georgia?
A. It wasn't some, it was quite a bit.
Q. Okay. But at no time did you perform one on your own without either a supervisor or you assisted in it or you observed, but at no time did you perform a total knee replacement by yourself, unsupervised, while at the medical college of Georgia; is that correct?
A. I would qualify that, if you wouldn't

mind. When you say "by yourself" and "under supervision," those can both be correct. Because under supervision means that someone is watching you, they're not holding your hand. So yes, I did do knee replacements on my own, but my attending, who is the surgeon who is always there, you know, but he's not telling me what to do or how to do it. That happens in the first three years of your residency. And each residency is different and each resident is different in how much responsibility they are given. And you advance according to your abilities.

Q. At any rate, not to debate this to the Nth degree, but at all times there was a senior orthopedic experienced surgeon observing you at a minimum, correct?

A. Yes.

Q. Right. And he would tell you if he saw something wrong?

A. Absolutely.

Q. All right. Thank you.

Now, in late '98 you came to Alaska?

A. That is correct.

Q. And you began work essentially at the beginning of '99; agree with that?

A. October 1, '98.
Q. Is when you arrived?
A. Yes. That's when I started.
Q. All right. And when you arrived with the VA, there was one other orthopedic surgeon with the VA, Dr. Paton?
A. Yes.
Q. And when you did Johnnie's surgery a year and two months later, Dr. Paton had long left the premises, hadn't he?
A. Yeah. Once again, I'm not very clear on exactly when he left.
Q. And Dr. Paton then was the only other orthopedic surgeon for a short period of time, and then on January 10th of 2001, you were the only orthopedic surgeon employed by the VA here in Anchorage?
A. That is correct.
Q. And at that time you were not licensed in Alaska, and you explained that you didn't need to be --
A. Yes.
Q. -- is that correct?
And you didn't obtain a license because you did not intend to stay; that's correct?

A. Yes. I -- I don't know if I was clear on that, by that time, but sometime later it became clear that we would be moving.

Q. Right. And you were not board certified at that time; that's correct, isn't it?

A. That's correct.

Q. All right. And that you only had done on your own, unassisted, or unattended by a senior surgeon, you had only done a very few knee replacements; that's correct, isn't it?

A. Few as in 50?

Q. What's your recall, sir?

A. I would have to pull the records. But my recollection is that it was about 25 to 50 joints a year when I pulled the averages at the end of my tenure.

Q. Well, you arrived in October of '98. October of '99, January, that would be what, 14 months? 16 months?

A. So October '98 to October '99 is one year. October '99 to 2000, October, is two years. And three more months. So three years and three months.

Q. Okay. Now, do you understand my question to mean all joints, or just total knee

replacements?

A. Even total knee replacements is what -- that's why I'm asking, what is a few. And, once again, we can go into the statistics of what -- you know, what low-volume surgery or high-volume surgery means.

But I think I would say -- you know, if I was to pull the records, I would say it would be about 50.

Q. About 50?

A. Yeah.

Q. All right.

THE COURT: Is that 50 a year or 50 in that 27 months?

THE WITNESS: No. 50 in that 27 months.

BY MR. KAPOLCHOK:

Q. Knees?

A. Yes.

Q. Total knee replacements?

A. That's correct.

Q. In your deposition you told me 40, a couple years ago.

A. Okay. So, close.

Q. Close.

Now, you'd agree with me that an improper

or a malposition of a tibial tray to create an anterior slope, would you agree with me that's a failure in surgical technique, or it's something that can be controlled by surgical technique? Let's take out the failure.

A. Yes. Anterior slope can be controlled with surgical technique.

Q. Okay. And your testimony today, I believe, is that you used an -- and correct me if I mispronounce this -- intramedullary post or shaft or pin to place the cutting block on the tibial tray; is that correct?

A. Yes.

Q. And if that is the tibia, this is the top of the tibia, Dr. Hall said that if you used the intramedullary manner, you take a drill and you drill a hole in the bone.

A. Uh-huh.

Q. Is that right?

A. That's correct.

Q. In the center, more or less?

A. More towards the front.

Q. Okay. And then you use a rod that's prepared by Profix to put into that hole?

A. That's correct.

Q. And then you put the cutting block on the rod?
A. Yes.
Q. All right. Now, the Profix system provides a cutting block with a 4 degree angle in it, doesn't it?
A. Yes.
Q. And the Profix knee system also has a 3 degree built-in angle or slope in it, doesn't it?
A. Yes.
Q. And if both are used, you end up with a 7 degree posterior slope?
A. That is correct.
Q. And the Zimmer knees that you use now after your fellowship, are designed for a 7 degree posterior slope, correct?
A. That is incorrect.
Q. It's not correct? Okay.
Would you agree with me, Doctor, that if -- what is this alignment guide, rod, or whatever, that's used? Is it called an alignment guide?
A. Yes. It's the intramedullary alignment guide.
Q. Would you agree with me if that is off,

then your cutting block is going to be in error?

A. See, the cutting block is not just one. You have the option of using a 0 or a 4 degree, just like in a Zimmer you have the option of using a 3 or a 7 degree. And you pick the one that seems to work the best for that patient.

And, yes, it is true that if the alignment rod is inserted, depending on where it is inserted on the surface of the tibia, you can change that alignment by a couple of degrees. I don't think you can change it a whole lot.

But it is also true that you can then adjust the cutting block to -- to have a couple degrees of adjustment. Even though it says 0 or 4, it doesn't have to be 0 or 4. Because when you put the guide on that, you pin it. And the position you pin it in is the final position on that block.

Q. Is it your testimony here today that it was your intent to make a 90 degree cut across the tibia; in other words, a 0 degree slope?

A. That's correct.

Q. Do you recall that?

A. Yes.

Q. Did you document that?

A. I don't think I dictated that, but that's

what I was doing in most knees that had good flexion at that time.

Q. Doesn't the Proform (sic) manufacturer's material, doesn't it recommend a 4 degree posterior slope for a number of reasons?

A. It has -- I haven't read it recently. But I would imagine that it has the option of both using 0 and 4 degrees.

Q. Well, it may provide the option. But my question, Doctor, is, doesn't the Profix material recommend a 4 degree posterior slope as beneficial for a number of reasons?

A. I would have to look at it.

Q. Okay. Isn't one of those -- well, would one of those reasons be that you can use a larger femoral component by having a posterior slope?

A. I -- no.

Q. You don't believe so? All right.

A. You know, I mean, this is -- this is such a limited way to look at a knee. You know, the --

Q. It may be, but I thought my question -- I'm trying to make it narrow.

By using a 4 degree cut and increasing the posterior slope to 7 degrees, isn't one of the benefits of that to the doctor, and the patient, is

to allow you to use a larger femoral component?
A. No.
Q. Okay.
A. That is not the case.
Q. All right. The notching you did, was that to use a large -- the notching you did in the femur, was that to use a larger femoral component or a smaller one?
A. Smaller one.
Q. Okay. Do you recall telling me in your deposition -- let me pass that.
You were present during Dr. Hall's testimony?
A. Today?
Q. Yes.
A. Yes.
Q. And you heard that Dr. Hall thought that if you had a 7 degree anterior slope, as opposed to a posterior slope, you would be able to recognize that when you trialed the knee after you put the final components in?
A. That's correct.
Q. Do you agree with that?
A. Yes.
Q. The x-ray I had Dr. Hall look at...

Could you identify that x-ray for us, please?

A. It is an x-ray, a lateral view of the knee, from 10/12/2000.

Q. Isn't that one of the lateral views that you examined under testimony with the government's lawyer?

A. Yes.

Q. Okay.

A. Or you would have to check that, because it's not the same size, so probably a little difference.

Q. Can you read the date?

A. It's 10/12/2000.

Q. Okay. Do you see the lines that have been drawn on that x-ray to show degree of slope?

A. Yes, I see the lines.

Q. Do you disagree that the tibial tray on that knee, you disagree that it has 5 to 7 degrees of anterior slope?

A. You cannot tell slope on a short x-ray.

Q. That x-ray, in your view, Doctor, is too short to do an accurate slope measurement?

A. Yes. There are two ways of checking alignment. One is a full length x-ray, and the

second is a CT scan. Those are the most accurate.

These are limited views. And, you know, you can -- you can actually put up all the x-rays, lateral views, and you'll measure a different slope on different x-rays.

THE COURT: Even though you're looking at the same --

THE WITNESS: Same knee.

THE COURT: -- knee?

THE WITNESS: Yes, sir.

BY MR. KAPOLCHOK:

Q. All right. When Dr. Chansky suggested that RSD was within the differential diagnosis, can you tell me why you, as Mr. Crisco's primary orthopedic doctor, did not order a bone scan?

A. A bone scan would be positive eight months after a knee replacement. It will show higher uptake.

Q. All right. So it's your opinion that the bone scan, taken by Dr. Hall in October after your knee replacement, would not be diagnostic of hot spots on the knee for mechanical problems, or diagnostic for RSD, because it's too close to the original implants? It's too close chronologically; is that your testimony?

A. A bone scan is a nonspecific test. It only shows increased uptake when there is some inflammation. Or one interesting thing is that the bone scan, as was mentioned in that testimony, it has -- it is not to do with white cells, it has to do with bone cells. I would want you to correct that. Because it has to do with bone turnover.

And when you do a bone scan, the third phase of the bone scan shows bone uptake. And because we have done an operation and there is increased turnover of bone cells, it's going to show an increased uptake related to the operation.

And that turnover, because we say healing of the total knee takes more than a year, that bone scan or bone turnover remains high for at least a year. That's why the bone scan stays positive for a year or a little longer.

And so, you know, if we do a test, we should be able to draw conclusions from the test. And, you know, if I order a test that is nonspecific, it only confuses the issue more.

And so, you know, for RSD, the first thing is to do a rehabilitation program. The second step would be to see if some injections or epidurals or sympathetic blocks work. And then, if all of that

is not working, then perhaps -- and if it's been more than a year, then a bone scan would be helpful.

Q. So according to your testimony, Doctor, a bone scan will not be helpful unless it's done after one year, with respect to a knee replacement?

A. Yes. That is correct.

Q. All right. And what is the diagnostic tool of choice for dealing with RSD, in your view, Doctor? For trying to determine whether there's RSD. Is it the bone scan?

A. That can be one of the -- that can be one of the tools, yes. You know, unfortunately, that is why RSD or what's called complex regional pain syndrome now is a diagnosis of exclusion. Because if we had one test which you could do and prove that this is what it is, everyone would be doing it. It wouldn't be such a big sort of diagnosis. And the other is called a diagnosis of exclusion.

So once you have ruled everything out, as far as infection and loosening, that's when you call it RSD. And that's why I don't think we had labeled him as an RSD at that point. Even though we had an opinion from Dr. Chansky, I don't think we had for sure said this is what it is and it's nothing

else.

Q. Have you read your expert's opinion in this case, Dr. Vigeland?

A. No.

Q. You have not looked at it?

A. No.

Q. Would you be surprised to learn that he's going to offer an opinion that Mr. Crisco either had RSD or an infection?

A. I would not be surprised.

Q. Do you think Mr. Crisco had an infection while he was under your care?

A. No.

Q. Do you think he had an infection when he was seen by Dr. Ross in October of 2001, just before he saw Dr. Hall?

A. No. Although, I'll tell you that because the implications of infection are so bad, we always think of that as a possibility. Do I think he had it? No. But if you -- if you look at every note I wrote, I will always write in there "persistent pain; is it an infection," you know.

Q. With regard -- I'm sorry. Did I interrupt?

A. No, I'm fine.

Q. Doctor, with regard to your record keeping, let me ask you a few things.

Normally, in planting a Profix knee -- oh, let me ask you. Of that 40 or 50 that you did, were those Profix components?

A. Yes.

Q. Normally, in a normal implant of Profix components, since you came to Alaska and started doing them on your own, would you normally end up with a 7 degree posterior slope?

A. No.

Q. You would not?

A. Vast majority of them I was cutting at 0 degrees or neutral.

Q. Then you would end up with a 3 degree posterior slope --

A. Yes.

Q. -- correct? All right.

At a minimum?

A. Yes.

Excuse me. Can we take this one down?

Q. Oh, sure. Sorry.

A. Because I'm hanging on to it because it might fall.

Q. Thank you.

A. Thank you.
Q. Doctor, do you have an opinion one way or the other, given what you know about Mr. Crisco, as to whether or not he had reflex sympathy dystrophy prior to surgery by Dr. Hall? And you have three choices. You don't have to have an opinion.
A. No, I -- I don't feel strongly one way or another.
Q. Okay. I'm not sure what that means. You don't have an opinion?
A. I do not have an opinion.
Q. Okay. Would you agree with me that your operative report on Mr. Crisco does not document that you trialed the final components?
A. I did -- I think I mentioned a trial in there.
Q. I take it you have read your operative report recently?
A. I have read it recently, but I would probably want to look at it if -- I believe that I mentioned in there that I did a trial of the knee components.
Q. After the installation of the final components? After they were cemented in?
A. After they were cemented in, that's not a

trial, that's the final knee.

Q. But you try it to see if everything glued together right, don't you?

A. Yes. We test -- we test the final knee for stability and tracking.

Q. Now, tracking is a different problem than what we're talking about, isn't it?

A. Yes.

Q. Tracking is the patella going up and down?

A. Yes. No, what I'm saying is -- now I understand what you're asking.

When we say trial, we talk about trial components, which are not the final components. Once the final components are put in, we just check the knee for stability and tracking and balance is what we call it. In other words, it's balanced well, front to back and side to side. And I don't know if I have mentioned it in there.

Q. Okay. But you would agree with me that a trial after the final components -- let me back up.

The trial components are discarded, the final components are selected and cemented, and then there is a trial of the knee as it is reformed or --

A. Yes.

Q. -- put together?
A. Yes.
Q. And that's the standard of care; you have to do that?
A. Yes.
THE COURT: I take it you don't usually call that last step a trial.
THE WITNESS: No, we don't call it a trial, because the final components are in.
THE COURT: It's already done.
THE WITNESS: And it's all done. And unless there is some circumstance where you just can't bend it or it's blocked, I don't see that you would take everything out. If there was a problem, yes, you might, you know, as in if it was severely stiff or malformed or the alignment was changed, then you might do something with it.
MR. KAPOLCHOK: Thank you, Your Honor.
BY MR. KAPOLCHOK:
Q. I think I'm confused now, because I -- in talking to Dr. Hall and looking at his operative report, he talks about a trial of the final components. Is that not what you write in?
A. No. A trial of the -- a trial of components is always a trial of the different -- the

trial components are not the final components. Once the final components are opened, you've completed the trial, you've made your adjustments, you've done the releases and the cuts, whatever needs to be adjusted, and you -- once you decide this is what you are going to put in, that's what is opened and that's what is put in. You bought it. That's what you accept.

Q. Okay. Dr. Bhagia, for the first time, since this case has been going on for years and years and years, I hear now a discussion of the high tibial osteotomy.

The x-rays you showed showed that Mr. Crisco had some bone removed to help what, do you remember what -- I know you didn't do it, but do you remember what it was for?

A. I can only tell you what a high tibial osteotomy is done for, and I assume that would be the reason to do it. And that is to realign the leg for arthritis when it is worn out more on one side than the other.

Q. Right. To level it?

A. To level it.

Q. Do you know how much bone was taken out of Mister -- did you review that operative report?

A. No. I do not know how much bone was taken out.

Q. Are you now saying that that surgery that Mr. Crisco had -- do you know when it was?

A. I believe it was in the '80s.

Q. In the '80s.

Are you now saying that that had some bearing on whether or not Mr. Crisco's knee was put in with anterior slope or posterior slope?

A. No, that is not what I am saying.

Q. Okay.

A. What I am saying is that previous operations, such as a high tibial osteotomy, have a bearing on persistence of pain or the rate of recovery after a knee replacement.

Q. Okay. When you diagnosed Mr. Crisco as an appropriate candidate for a total knee replacement, one of the reasons he was in there was because of pain?

A. Yes.

Q. And was it your opinion at that time that some of his pain was caused by the high tibial osteotomy?

A. No.

Q. The court asked you a question in

reviewing some of those x-rays of where all the height or separation goes between the femoral bone piece and the tibia. And most of that is cartilage, isn't it?

A. The space between the --

Q. The space.

A. -- the femur and the thighbone and the leg bone --

Q. Yeah.

A. -- which is the femur and the tibia, is cartilage.

Q. Yeah. And in Mr. Crisco's case, after laying carpets and doing stuff for 40 years, it was just worn out, wasn't it?

A. Yeah. The knee was worn out. But I was pointing out the height, actual level of the knee joint. You know, the level of the joint can go up or down based on how much bone is removed. Besides the fact that the padding inside the knee can wear out.

Q. Wear out; okay.

A. So...

Q. Those are the -- you were comparing the side-by-side x-rays?

A. Yes.

Q. Okay. That's good.

That didn't make Mr. Crisco less of a candidate to have his knee replaced, did it? The fact that he had had a high tibial osteotomy?

A. No.

Q. Despite that you think that a bone scan is not -- and correct me if I'm overstating this or misstating.

Despite that you think that a bone scan is not properly diagnosed at -- diagnostic if it's not later than a year after the implantation, did you review the bone scan that Dr. Hall took and make a judgment as to whether his findings were correct or not?

A. I have not seen that. I have read reports on that.

Q. Okay.

A. I've read the report. And I'm not saying it is wrong to do a bone scan. It's just you have to interpret it more carefully if it's early on, because it may cause you to do things which may not be appropriate.

Q. There are many reasons to do a revision to a knee, correct?

A. Yes. That is correct.

Q. Many of them are not at all related to any failure to meet the standard of care; would you agree with that?

A. Yes, that is correct.

Q. Infection is one of them, correct?

A. Yes.

Q. Malpositioning is one of them, is a reason to do a revision?

A. It is a relatively rare indication. The top reasons are infection and loosening of the implants.

Q. And loosening of the components, that's another one.

Would you agree with me, Doctor, that the literature says that 11 percent of the revisions are done because of malpositioning of components?

A. Approximately --

Q. Approximately 11 percent.

A. -- that.

Q. All right. Would you further agree with me, Doctor, that most of those revisions are done within a year, for malpositioning of components, most of those revisions, based on the literature, 11 percent are done -- not 11 percent of those, but 11 percent of the revisions done for malposition, most

of those, more than 50 percent of them, are done within a year?

A. Once again, I'm going to say yes, but this -- just like you pointed out, you know, is this a malposition of the slope or is it a malposition of the varus and valgus, which is the sideways rather than front to back angulation. Because I think that if -- again, you know, you have to see if it's causing instability. If it's causing limited range of motion.

You know, the reasons to do a revision are not what the picture shows, what the x-ray shows. That is very important to distinguish here. You know, when you say that revisions are done for malalignment or malposition, it's not that people are looking at an x-ray and saying "oh, this needs a revision," that is absolutely not the case.

So it is true that, you know, revisions are done for malalignment, 10 percent or so. And it is -- it's almost exactly the number that I was stating outside that ideal range, even when experienced surgeons do that. So it coincides very well with the literature that, you know, the knees are not aligned well about 10 percent of the times. But those have to be associated with some symptoms

or findings of instability, you know, a loose knee, that would -- that's what causes you to do -- redo a revision, not just a picture.

Q. What about the picture that Dr. Hall at least sees as being significantly having a wrong slope, then accompanied by pain; would that be a valid reason to do a revision?

A. That's where opinions come in. That's where -- you know, when you train on different sets of implants you can have different opinions.

MR. KAPOLCHOK: Dr. Bhagia, thank you.

Thank you, Your Honor.

REDIRECT EXAMINATION

BY MR. POMEROY:

Q. I just have a couple questions to clarify a couple of points that Mr. Kapolchok raised.

You testified that during your time when you began at the VA in October 1998 to the time of Mr. Crisco's surgery, you estimate you did about 40 to 50 total knee replacements.

Did you do any total knee replacements either as the primary surgeon or as assisting when you were in your residency in India, residency for orthopedic surgery.

A. No, I did not.

Q. Okay. So how many total knee replacement surgeries did you participate in, in one form or another, during your residency at the medical college in Georgia?

A. Again, I can figure up probably a hundred. Around a hundred. It's a rough number. Because, you know, we just -- we do a tally at the end of the residency, and you come out with certain hundred numbers of joints. And we just -- you know, the first three years you are basically assisting, and then you are doing it. So I would say about a hundred.

Q. And...

MR. POMEROY: Actually, those are the only points I wanted to clarify. Thank you.

THE COURT: It's almost 4 o'clock. Let's call it a day at this point.

Thank you, Doctor --

THE WITNESS: Thank you, sir.

THE COURT: -- you may step down.

We'll resume at 9 o'clock tomorrow morning.

And if you would not forget to give us a rundown on exactly what x-ray exhibits we have admitted.

We're in recess until 9 o'clock tomorrow morning.

THE CLERK: All rise.

This matter is in recess until 9 a.m. tomorrow.

(Proceedings recessed; Counter 3:56:00.)

TRANSCRIBER'S CERTIFICATE

I, KATHERINE L. NOVAK, RPR, Registered Professional Reporter, hereby certify that the foregoing transcript is a true, accurate, and complete transcript of proceedings in Case No. 3:03-cv-0011-HRH, Crisco versus USA, transcribed by me from a copy of the audiotaped recording to the best of my ability.

Further, that I am a disinterested person to said action.

_____
Date

_____
Katherine L. Novak, Transcriber